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JUN 17 1971

Oil and Gas Conservation Commission

OF THE STATE OF MONTANA

ANNUAL REVIEW FOR THE YEAR 1970
Relating to

OIL AND GAS

Volume 14

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Annual Review for the Year 1970

Volume 14

INTRODUCTION

Oil production in Montana during 1970 amounted to 37,878,697 barrels. This represents a reduction in crude oil produced in the State as compared to 1968 and 1969 primarily due to a decrease of production from the Bell Creek (Muddy sandstone) Field. However, during 1970 two areas of Bell Creek Field were unitized and secondary recovery by peripheral waterflood was initiated. The unit "Area A" waterflood showed a response in the October production and in December had an average daily increase of 2,400 barrels compared with September. Ultimately the Bell Creek Field will comprise five or six unitized waterflood areas and production should increase considerably during 1970 and 1971.

Even though nearly 38,000,000 barrels of oil were produced in 1970, the estimated recoverable reserves for Montana dropped only 4,667,000 barrels. This is due to a re-evaluation of several fields based on their improved performance during 1970. Increased additional reserves were assigned to Cabin Creek Field (2.3 mil.), Cut Bank area (6 mil. due to waterflood response), Pine Field (2.2 mil.). New fields in the Williston Basin added about 6 million in reserves.

Secondary recovery, mostly by waterflood, continues to add significantly to total Montana production. Floods at Kevin Sunburst, Bell Creek, and Keg Coulee fields all indicated good response during 1970. The Keg Coulee Field is unusual in that water injection was made for two years before any appreciable response was noted. Secondary recovery projects in operation now total 58, and it is estimated that these projects contribute 25 percent of all oil produced in the State.

The large Tiger Ridge Gas Field in north-central Montana continued to grow in 1970 although the anticipated interstate pipe line outlet did not materialize. There are now approximately 100 shut-in gas wells in the field on 640-acre spacing. Ten wells connected to a local pipe line produced slightly in excess of 2 billion cubic feet during 1970. Some large lease blocks were assembled during 1970, primarily to explore for gas. Gas production marketed during 1970 was 36,710,294 MCF. Additional gas for injection purposes and lease use would raise this total to over 40,000,000 MCF.

Of future importance to Montana was the development of excellent production in the Madison Formation in the Wyoming portion of the Elk Basin Field during 1970 with wells producing from 1,000 to 1,500 barrels per day. This productive horizon will undoubtedly be tested in the Montana portion of this field during 1971.

Probably the most significant event of 1970 was the successful development of several deep (12,000') Red River dolomite fields in the Williston Basin. Of the twenty-three discoveries listed in Montana for 1970, five (22%) belong in this category. Initial production in these discoveries ranged from 244 to 4,000 barrels per day flowing with associated gas of one-half to six million cubic feet per day. Most important was the high success ratio for these deep Red River tests. Following detailed seismic evaluation and interpretation about 30 per cent of the tests drilled were successful and continued exploration during 1971 is assured.

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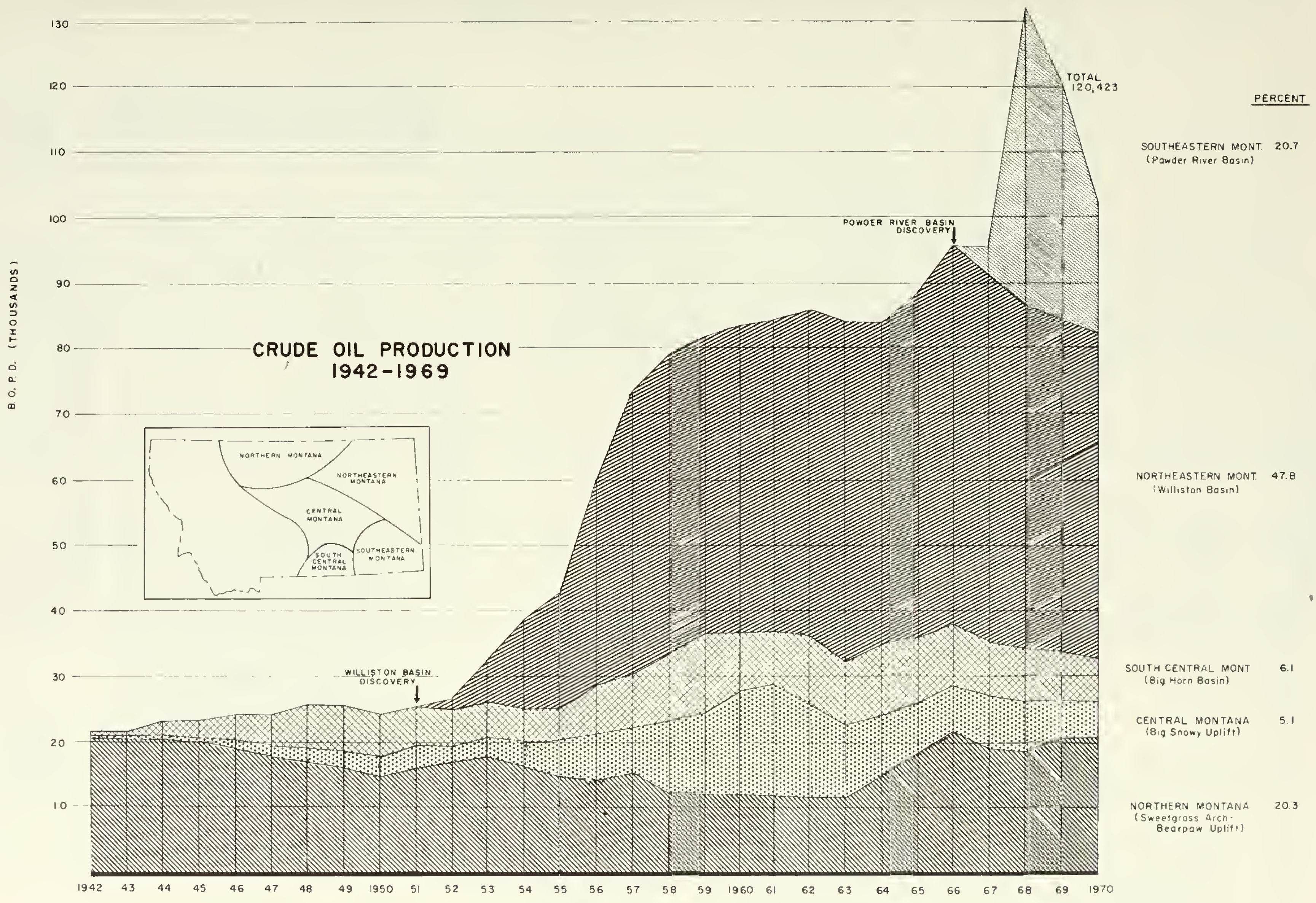
FIVE YEAR SUMMARY

	1966	1967	1968	1969	1970
Production, Northern Montana—Bbls.	7,991,302	6,758,280	6,883,493	7,557,966	7,680,831
South Central—Bbls.	3,392,890	3,181,132	2,885,272	2,739,346	2,329,187
Central—Bbls.	2,710,194	2,872,604	2,728,357	2,011,445	1,915,273
Williston Basin—Bbls.	21,285,732	20,475,733	19,390,652	18,396,618	18,110,147
Powder River Basin—Bbls.	......	1,671,277	16,572,472	13,248,737	7,843,259
TOTAL	35,380,118	34,959,026	48,460,246	43,954,112	37,878,697
No. of Producing Wells, Northern Montana	2,308	2,097	1,898	1,827	1,806
South Central	106	96	99	108	92
Central	301	286	282	244	200
Williston Basin	792	802	784	759	743
Powder River Basin	......	109	328	397	371
TOTAL	3,507	3,390	3,391	3,335	3,212
Average Daily Production/Well—BOPD,					
Northern Montana	9.5	8.8	9.9	11.3	11.6
South Central	87.7	90.7	79.6	69.5	69.3
Central	24.7	27.5	26.4	22.6	26.2
Williston Basin	73.6	69.9	67.6	66.4	66.8
Powder River Basin	......	70.6	138.0	91.4	57.9
STATE AVERAGE	27.6	28.2	39.0	36.1	32.3
Development Wells Drilled, Oil Wells	179	162	300	171	60
Gas Wells	9	14	14	44	30
Dry Holes	96	104	89	105	63
TOTAL	284	280	403	320	153
Exploratory Wells Drilled, Oil Wells	10	7	15	15	12
Gas Wells	3	5	13	5	11
Dry Holes	185	191	509	466	272
TOTAL	198	203	537	486	295
TOTAL WELLS DRILLED	482	483	940	806	448
TOTAL FOOTAGE DRILLED	2,211,369	2,158,964	4,547,691	3,682,758	1,969,583
AVERAGE DEPTH OF ALL WELLS	4,588	4,470	4,839	4,569	4,396

SUMMARY OF DRILLING BY COUNTIES—1970
STATE OF MONTANA

County	Wildcats Dry	Wildcats Oil	Wildcats Gas	Development Dry	Development Oil	Development Gas	Total Wells	Footage Drilled	Average Depth
Beaverhead	1	0	0	0	0	0	1	4,125	4,125
Big Horn	6	0	0	0	0	0	6	28,619	4,769
Blaine	25	0	1	4	0	3	33	111,708	3,385
Carbon	2	0	0	1	0	2	5	28,637	5,727
Carter	39	0	0	0	0	0	39	164,897	4,228
Chouteau	5	0	1	0	0	0	6	10,642	1,773
Custer	2	0	0	0	0	0	2	10,327	5,163
Daniels	8	1	0	0	0	0	9	55,932	6,214
Dawson	1	0	0	0	2	0	3	28,017	9,339
Fallon	5	0	0	1	6	0	12	87,175	7,264
Fergus	4	0	0	0	0	0	4	9,977	2,494
Garfield	2	0	0	0	0	0	2	11,090	5,545
Glacier	3	0	2	2	11	3	21	87,503	4,167
Golden Valley	1	0	0	0	0	0	1	1,750	1,750
Hill	42	0	3	12	1	19	77	148,672	1,930
Judith Basin	3	0	0	0	0	0	3	7,608	2,536
Liberty	17	0	1	1	0	2	21	63,072	3,003
McCone	3	0	0	1	1	0	5	33,035	6,607
Musselshell	9	2	0	8	5	0	24	103,657	4,319
Petroleum	0	0	0	2	0	0	2	3,029	1,514
Phillips	9	0	2	0	0	0	11	36,071	3,279
Pondera	4	0	0	2	11	0	17	51,076	3,004
Powder River	35	0	0	14	2	0	51	281,147	5,512
Richland	3	5	0	1	2	0	11	138,368	12,578
Roosevelt	3	1	0	0	1	0	5	40,349	8,070
Rosebud	15	0	0	1	0	0	16	95,606	5,975
Sheridan	2	3	0	8	13	0	26	216,366	8,322
Stillwater	1	0	0	0	0	0	1	1,010	1,010
Sweetgrass	1	0	0	0	0	0	1	2,674	2,674
Teton	1	0	0	0	1	0	2	12,278	6,139
Toole	11	0	1	5	4	1	22	47,829	2,174
Treasure	1	0	0	0	0	0	1	7,177	7,177
Valley	4	0	0	0	0	0	4	19,113	4,783
Wibaux	1	0	0	0	0	0	1	11,400	11,400
Yellowstone	3	0	0	0	0	0	3	9,647	3,215
TOTALS	272	12	11	63	60	30	448	1,969,583	4,396



CRUDE OIL PRODUCTION 1942-1969

GAS PRODUCTION DATA—1970

Field	County	Producing Formations	1970 Production M.C.F.
Bell Creek	Powder River	Muddy	6,905,208
Big Coulee	Golden Valley & Stillwater	Lakota & Morrison	997,198
Blackjack	Liberty	Sunburst & Swift	887,082
Box Elder	Blaine	Eagle	131,035
Bowdoin	Phillips & Valley	Colorado	2,637,040
Bowes	Blaine	Eagle	343,620
Cabin Creek	Fallon	Interlake & Red River	1,243,508
Cedar Creek	Fallon & Wibaux	Judith River & Eagle	4,088,627
Clark's Fork South	Carbon	Greybull	—
Cut Bank & Reagan	Glacier & Toole	Cut Bank & Madison	6,696,872
Dry Creek	Carbon	Eagle & Frontier	470,661
Elk Basin	Carbon	Tensleep	1,190,053
Flat Coulee	Liberty	Blackleaf & Swift	202,864
Gold Butte	Toole	Swift	32,066
Grandview	Liberty	Blackleaf & Kootenai	472,665
Hardin	Big Horn	Frontier	29,151
Keith Block	Liberty	Blackleaf & Sawtooth	1,577,563
Kevin Sunburst	Toole	Kootenai	568,643
Lake Basin	Stillwater	Frontier	884,765
Middle Butte	Toole	Blackleaf	36,410
Mt. Lilly	Liberty	Madison	362,764
Pine	Dawson, Prairie, Fallon & Wibaux	Interlake & Red River	668,516
Plevna	Fallon	Judith River	76,682
Squaw Coulee	Hill	Eagle	813,060
Tiger Ridge	Blaine, Hill	Judith River & Eagle	466,985
Utopia	Liberty	Blackleaf, Kootenai & Ellis	708,402
Whitlash	Liberty	Blackleaf, Kootenai	1,210,388
Miscellaneous			3,008,466
		TOTAL ALL FIELDS	36,710,294

REFINING—1970

	Year 1970 Total Bbls.
Big West Oil Company	1,207,141
Continental Oil Company	13,819,783
Diamond Asphalt Company	157,562
Farmers Union Central Exchange, Inc.	8,694,628
Humble Oil & Refining Company	14,532,140
Jet Fuel Refinery	34,147
Phillips Petroleum Company	1,690,588
Spruce Oil Company	290,398
Tesoro Petroleum Company	515,831
Union Oil Company	1,388,002
TOTAL Barrels Oil Refined in Montana, 1970	42,330,220

Refining Five Year Comparison

1966	1967	1968	1969	1970
33,429,176	37,077,747	40,951,393	40,437,537	42,330,220

SUMMARY OF SECONDARY RECOVERY PROJECTS
(Date Effective to January 1, 1971)

Field, Formation	Operator	Type of Project	Injection Pattern	Date Injections Commenced	Cumulative Injections 1000' Bbls. or MCF	Dec. 1970 Avg. Daily Inj. Rate Bbls or MCF	No. of Injection Wells	Source of Injection Media & Remarks
Ash Creek, Shannon	McOermott	Waterflood	Periphial	10-15-64	650	175	4	Parkman
Bell Creek, Muddy	Gary Unit "A"	Waterflood	Periphial	7-1-70	5,152	35,330	17	Madison
Bell Creek, Muddy	Gary Unit "B"	Waterflood	Periphial	11-1-70	331	7,839	6	Madison
Big Wall, Tyler "B"	Texaco, Inc.	Waterflood	Semi-Periphial	8-20-66	7,955	5,549	2	Produced water from Amsden & Tyler
Bowes, Sawtooth	Texaco, Inc.	Waterflood	Random	5-23-61	3,360	1,509	6	Madison
Cabin Creek, Siluro-Ordovician	Shell Oil	Waterflood	Semi-Periphial	6-12-59	60,700	43,500	31	Produced Water & Fox Mills
Cat Creek, Swift	Robert Moss	Waterflood	Semi-Periphial	7-30-70	24	51	1	Third Cat Creek Sand
Cat Creek, 1st & 2nd CC (Unit 1)	Farmers Union	Waterflood	Semi-Periphial	10-10-62	6,783	1,153	4	Third Cat Creek Sand
Cat Creek, 1st & 2nd CC (Unit 2)	Farmers Union	Waterflood	Semi-Periphial	12-1-59	15,915	446	3	Third Cat Creek Sand
Cut Bank NE, Cut Bank	Texaco, Inc.	Waterflood	5-Spot	6-2-63	5,804	1,971	15	Madison
Cut Bank NW, Cut Bank	Humble Oil	Waterflood	5-Spot	1-30-62	11,558	2,100	19	Madison
Cut Bank So. Central, Cut Bank	Union Oil	Waterflood	5-Spot	5-63	17,736	6,529	4	Madison
Cut Bank SE Unit, Cut Bank	Texaco, Inc.	Waterflood	5-Spot	4-62	28,394	14,790	52	Madison
Cut Bank SW, Cut Bank	Phillips Petr.	Waterflood	5-Spot	9-62	30,000	25,500	120	Madison
Cut Bank Tribal, Lander Sand	Humble Oil	Waterflood	Random	6-51	4,304	0	4	Eagle
Cut Bank M. C. Lander, Lander	Humble Oil	Waterflood	Random	4-65	1,090	370	2	Eagle
Cut Bank Lander Sand, Lander	Texaco, Inc.	Waterflood	Random	7-64	3,644	2,259	8	Eagle
Cut Bank, McGuiness-Moulton	Union Oil	Waterflood	Random	12-62	2,124	760	1	Madison
Cut Bank Two Medicine, Cut Bank	Miami Oil	Waterflood	5-Spot	12-67	13,433	16,198	93	Madison
Oarling State Unit, Moulton	B.G. & O. Co.	Waterflood	Random	2-67	1,063	979	1	Produced Water
Oarling NE Unit, Moulton	Ralph Fair	Waterflood	Random	2-68	1,486	1,898	3	Madison
Oarling South, Swenson-Moulton	B. G. & O. Co.	Waterflood	Random	2-67	3,493	3,137	6	Madison
Dwyer, Ratcliffe	Phillips Petr.	Waterflood	Pilot	10-68	285	339	2	Produced Water
Elk Basin, Frontier	Pan American	Gas Injection		1926	All Injection Wells In Wyoming			Purchased Gas
Elk Basin, Embar-Tensleep	Pan American	Gas Injection		1949	1,514	No Inj.	2	Purchased Gas
Elk Basin, Madison	Pan American	Waterflood	Periphial	1962	25,763	No Injection in 1970		Madison
Elk Basin NW, Frontier	Atlantic Rich.	Waterflood	Periphial	10-57	4,864	247	2	Madison
Elk Basin NW, Tensleep	Atlantic Rich.	Waterflood	Semi-Periphial	5-67	910	1,355	1	Produced Water & Madison
Fairview NW, Red River	Superior Oil	Gas Inj.	Crestal	10-25-70	44,000	1,428	1	Purchased Gas
Fred & George, Sunburst	Fulton Prod.	Waterflood	Random	7-70	422	3,650	1	Madison
Gas City, Siluro-Ordovician	Shell Oil	Waterflood	Semi-Periphial	10-31-69	1,140	3,440	7	Mission Canyon
Keg Coulee West, Tyler	Pan American	Waterflood	Semi-Periphial	8-31-66	2,802	14,710	2	Madison
Keg Coulee East, Tyler	Continental Oil	Waterflood	Semi-Periphial	12-24-69	767	2,299	4	Third Cat Creek
Keg Coulee South, Tyler	B. G. & O. Co.	Waterflood	Semi-Periphial	1-1-70	212	646	1	Madison
Kelley, Tyler	McAlester Fuel	Waterflood	Random	7-69	223	480	1	Third Cat Creek
Kevin-Sunburst, Madison	Imperial Craig	Waterflood	Random	11-1-70	Not in Operation			Madison
Kevin-Sunburst, Madison	B. G. & O. Co.	Waterflood	Random	8-64	1,888	1,380	7	Madison
Kevin-Sunburst, Madison	Texaco, Inc.	Waterflood	Semi-Periphial	8-64	4,748	2,739	10	Madison
Kevin-Sunburst, Madison	Lon Crumley	Waterflood	Random	9-63	616	230	3	Madison
Little Beaver, Red River	Shell Oil	Waterflood	Semi-Periphial	8-7-66	9,607	7,200	13	Madison
Little Beaver East, Siluro-Ord.	Shell Oil	Waterflood	Semi-Periphial	4-65	4,943	1,580	3	Madison
Lookout Butte, Siluro-Ord.	Shell Oil	Waterflood	Semi-Periphial	4-67	8,682	6,760	12	Minnelusa
Mosby Dome, Second Cat Creek	Farmers Union	Waterflood	Random	5-68	114	129	1	Third Cat Creek
Mosby Dome, Swift	Farmers Union	Waterflood	Random	7-67	1,173	1,131	5	Third Cat Creek
Moulton, Moulton	Union Oil	Waterflood	Random	8-68	3,749	4,295	6	Madison
Pennel, Red River	Shell Oil	Waterflood	Random	6-28-69	6,234	10,090	38	Produced Water & Oakota
Pine South, Red River	Shell Oil	Waterflood	Semi-Periphial	3-59	60,208	22,600	46	Produced Water & Fox Mills
Pine North, Red River	Shell Oil	Waterflood	Semi-Periphial	3-68	4,449	5,100	11	Lodgepole
Pondera, Madison	Phillips Petr.	Waterflood	Random	8-61	939	No Inj.	2	Madison
Ragged Point, Tyler "A"	B. G. & O. Co.	Waterflood	Semi-Periphial	12-3-66	3,054	1,574	6	Third Cat Creek
Reagan, Madison	Union Oil	Gas Inj.	Pilot	8-61	3,235	986	2	Produced Gas
Red Creek, Cut Bank	Humble Oil	Waterflood	5-Spot	6-65	4,625	1.525	7	Madison
Richey SW, Oawson Bay-Interlake	Atlantic Rich.	Waterflood	Random	12-65	1,857	407	1	Fox Mills
Stensvad, Tyler "B"	Pan American	Waterflood	Semi-Periphial	2-63	15,968	8,810	7	Madison
Sumatra West, Tylar	Continental Oil	Waterflood	Semi-Periphial	10-68	3,030	3,336	8	Madison
Sumatra Central, Tyler "B"	Texaco, Inc.	Waterflood	Semi-Periphial	9-16-69	7,427	21,026	13	Madison
Sumatra NE, Tyler "B"	Texaco, Inc.	Waterflood	Semi-Periphial	9-16-69	524	1,139	3	Madison
Sumatra SE Unit, Tylar "B"	B. G. & O. Co.	Waterflood	Semi-Periphial	12-1-69	1,232	2,826	7	Madison
TOTAL 58					W 407,454	W 306,087	637	
					G 47,235	G 2,414		

OIL AND GAS DISCOVERIES IN 1970

County	Operator--Well Name and Location	Field	Total Depth	Initial Potential Oil B/D	Initial Potential Gas MCF	Producing Formation	Completed
Blaine	Comanche Drilling Co., Paulsen-Klies 1, SW NE 3-33N-17E	Unnamed	1,303		Testing	Eagle	Not Available
Chouteau	Petr. Eng. and Management, IX Ranch 1, NW SE 8-27N-14E	Unnamed	1,150		Shut-in	Eagle	2-9-70
Daniels	Murphy Oil Corp., Delagraves 1, NE SW 19-36N-47E	Unnamed	7,390	159 F		Charles "B"	6-29-70
Glacier	Montana Power Co., Tribal 1857-1, SE SW 5-37N-7W	West Reagan	2,258		785	Blackleaf	5-2-70
Glacier	Johnston Petr. Corp., Hunes 1, SE NE 21-36N-6W	Unnamed	3,317		320	Blackleaf	9-29-70
Hill	Iverson, Sommers 1, NW SE 26-33N-13E	Unnamed	1,272		Shut-in	Eagle	9-23-70
Hill	Comanche Drilling Co., Larson 1, SE NW 26-34N-16E	Unnamed	1,261		Testing	Eagle	Not Available
Hill	Comanche Drilling Co., Paulsen 1, NE SW 33-34N-17E	Unnamed	1,450		Testing	Eagle	Not Available
Liberty	Petroleum Inc., Johnson "D" 1, NW NE 28-35N-7E	Unnamed	3,320		300	Sawtooth	11-7-70
Musselshell	Resources Capital, NPRR 1, SE SW 3-10N-28E	North Willow Creek	4,108	256 P		Tyler "B"	3-31-70
Musselshell	McAlester Fuel Co., NPRR 1, NE NW 3-10N-27E	Little Wall Creek	3,771	124 F		Tyler "B"	11-27-70
Phillips	Austral Oil, Austin-Federal 1, SE SE 35-35N-31E	Unnamed	1,436		100	Phillips	7-18-70
Phillips	El Paso Oil and Gas, Martin Lake 1, SW NE 6-35N-31E	Unnamed	1,470		Testing	Phillips	7-1-70
Richland	King Resources,* Lewis 1, NW NW 10-24N-57E	Lonetree Creek	12,620	570 F	500	Red River	1-31-70
Richland	Consolidated Oil and Gas, Ft. Gilbert 1, NW NW 32-24N-59E	Fort Gilbert	12,576	4044 F	6,389	Red River	10-29-70
Richland	Continental Oil Co., Grosvold 1, SW NW 35-26N-58E	Otis Creek	12,787	244 F	383	Red River	4-1-70
Richland	Pennzoil United, Leo 1, SW SE 4-23N-59E	Canal	12,810	585 F	339	Red River	8-28-70
Richland	Miami Oil Producers, Nevins 1, C NW 8-23N-55E	Unnamed	11,920	65 P		Dawson Bay	10-15-70
Roosevelt	Consolidated Oil and Gas, McCabe 1, NW NW 2-29N-56E	Unnamed	12,210	2862 F	3,019	Red River	12-22-70
Sheridan	Wheless Drilling, Joyes 1, SE SW 12-37N-56E	Salt Lake	8,040	47 P		Bakken-Nisku	8-31-70
Sheridan	Jack Johnson, State 16-1, Lot 3 Sec. 16-32N-59E	Unnamed	7,981	152 P	44	Ratcliffe	1-22-70
Sheridan	Sun Oil Company, Joyes-State 4, NE NW 16-37N-57E	Flat Lake	8,025	48 P		Nesson	12-19-70
Toole	Wheless Drilling, Johnson 1, NE NW 1-36N-3E	Trail Creek	2,623		4,100	Sunburst	6-19-70
	*Operator now U. S. Smelting and Refining						
SIGNIFICANT EXTENSIONS IN 1970							
Fallon	Saratoga Prod. Co., NPRR 3, SW NE 5-9N-59E	Cupton	9,585	577 P		Red River	3-29-70
Glacier	Sawtooth Oil Co., U.S.A. 1, NE SE 35-37N-6W	Cut Bank	3,185		472	Sunburst	7-18-70
Glacier	Montana Power Co., Tribal 1847-1, C NE 7-37N-7W	West Reagan	2,370		634	Blackleaf	3-15-70
Hill	C. J. Iverson, Sommers 25-1, SW NE 25-33N-13E	Tiger Ridge?	1,240		SIGW	Eagle	Not Available
Liberty	Petroleum Inc., Johnson 1-D, NW NE 28-35N-7E	Unnamed	3,320		SIGW	Sawtooth	11-9-70
Roosevelt	Mesa Petroleum, Biere 1-22, NW SE 22-28N-51E	East Poplar	5,845	516 F	150	Charles "C"	6-8-70
Toole	Tom Bolack, Hellinger 2-C, C NE 20-32N-2E	Unnamed	1,151		SIGW	Bow Island	2-25-70
Toole	Tom Bolack, Ostrem 1, SE NW 30-31N-1E	Unnamed	1,918		SIGW	Dakota?	Not Available

OIL AND GAS FIELDS

Field, Formation, Age	No. Prod. Wells	Type of Trap	Probable Drive Mechanism	Spacing Regulations, Field Rules, and Remarks	Secondary Recovery or Water Disposal
ANTELOPE					
Swift (U. Jr.)	3	Structural	Water Drive	(Listed as part of Cat Creek Field.)	None
ARCH APEX					
Bow Island (L. Cret.) Gas Swift (Jurassic) Gas (Shut-in)	22 1	Strat. Strat.	Volumetric Volumetric	330′ from legal subdivision; 2400′ from any other drilling or producible gas well producing from the same reservoir; 75′ topographic tolerance. (Order 4-60.) (Sometimes called Colorado Blackleaf pool.) (Swift) State-wide.	None
ASH CREEK					
Shannon (U. Cret.)	3	Structural	Partial Water Drive and Depletion	Spacing waived with unitized portion of field except no well may be drilled closer than 660′ from unit boundary. (Order 4-65.)	Waterflood started October, 1964. (Orders 22-64, 15-66.)
BAINVILLE					
Red River (Ord.) (Shut-in)	1 1	Structural-Strat.	Depletion-Water Drive	State-wide.	None
BANNATYNE					
Swift (U. Jr.) (Shut-in) Sun River (U. Miss.) (Shut-in)	2 2	Structural	Comb. Water Drive and Volumetric	Center of 10-acre tracts, 50′ topographic tolerance. Commingling permitted. (Order 20-58.)	Pilot waterflood of Swift suspended in 1963.
BASCOM					
Amsden (Penn.) Tyler (L. Penn.) (Shut-in)	(behind pipe) 1	Strat. Struct.-Strat.	Water Drive Depletion	State-wide. (Order 10-63.)	None
BEARS DEN					
Sunburst (L. Cret.) Gas (Shut-in) Swift (U. Jr.) Oil Sawtooth (Jr.) Gas (Shut-in)	2 5 1	Structural	Depletion and Gas Cap Drive	State-wide.	None
BELL CREEK					
Muddy (L. Cret.) (Oil & Gas)	363	Strat.	Depletion	40-acre spacing units with location 660′ from unit boundary with 150′ tolerance for topographic reasons only. (Orders 37-67, 39-67, 50-67, 1-69, 17-70.) Gas extraction plant.	Two areas unitized (Unit "A" and "B") flood uses Madison water. (Orders 7-70, 23-70.)
BENRUD					
Nisku (Dev.) (Shut-in)	1	Structural	Water Drive	160-acre spacing units with permitted location within a 1320′ square in center of quarter section. (Order 6-65.)	Water disposal into Judith River Formation. (Order 64-62.)

Field, Formation, Age	No. Prod. Wells	Type of Trap	Probable Drive Mechanism	Spacing Regulations, Field Rules, and Remarks	Secondary Recovery or Water Disposal
BENRUD, EAST					
Nisku (Dev.)	2	Structural	Water Drive	Same as Benrud Field. (Order 6-65.)	Water disposal into Judith River formation. (Order 64-62, 32-66.)
BENRUD, NORTHEAST					
Nisku (Dev.)	1	Structural	Water Drive	Same as Benrud Field. (Order 6-65.)	Water disposal into Judith River formation. (Order 32-66.)
BERTHELOTE					
Sunburst (L. Cret.)	1	Strat.	Depletion	40-acre spacing units with well no closer than 330′ from lease or property line and not closer than 660′ between wells. (Order 18-66.)	None
BIG COULEE					
3rd Cat Creek (L. Cret.) Gas	5	Structural	Water Drive	State-wide.	None
Morrison (U. Jur.) Gas	1	Structural	Water Drive		
BIG WALL					
Amsden (Penn.)	2	Structural	Water Drive	Spaced by old state-wide spacing; 330′ from lease or property line, 990′ between wells in same reservoir. (Order 12-54.)	Previous disposal into Tyler "A" stopped in 1961. Waterflood of Tyler "B" sand started August, 1966. (Order 22-66.)
Tyler (Penn.)	14	Struct.-Strat.	Depletion		
BLACKFOOT					
Cut Bank (L. Cret.) (Shut-in)		Strat.	Depletion	One well only per 40-acre spacing unit, 300′ tolerance from center of spacing unit. Dual completion in Cut Bank and Madison with administrative approval. (Order 3-57.)	None
Sun River (Miss.)	6	Structural	Water Drive		
BLACK JACK					
Sunburst (L. Cret.) Gas	10	Strat.	Depletion	One gas well per 160-acres, no closer than 660′ from boundary of each unit. (Order 3-69.) Oil: State-wide spacing.	None
Swift (U. Jur.) (Gas & Oil)	1				
BORDER					
Cut Bank (L. Cret.) (Oil & Gas)	4	Strat.	Depletion	Oil: 220′ from boundary of legal subdivision and 430′ between wells in same formation; 75′ topographic tolerance. Gas: 330′ from boundary of legal subdivision. 2400′ between wells in same formation on same lease. 75′ topographic tolerance. (Order 7-54.)	None

Field, Formation, Age	No. Prod. Wells	Type of Trap	Probable Drive Mechanism	Spacing Regulations, Field Rules, and Remarks	Secondary Recovery or Water Disposal
BOWDOIN					
Bowdoin & Phillips sands in Colorado Shale (U. Cret.) Gas	281 65	Structural	Volumetric	One well per quarter section not less than 1000′ from lease boundary or less than 2000′ from any gas well in same horizon. (Order 29-55.)	None
BOWES					
Eagle (U. Cret.) Gas	18	Structural	Volumetric	660′ from boundary of legal subdivision, 1320′ from other wells in same formation. 75′ topographic tolerance. (Order 23-54.)	None
Sawtooth (M. Jur.)	52	Structural	Partial Water Drive	330′ from lease or property line, 990′ between wells in the same formation. (Order 13-54.)	Pilot waterflood initiated in 1961 and expanded to field-wide waterflood in 1965. (Order 5-61.) Water from Madison.
BRADLEY					
Sun River (Miss.)	1	Structural	Water Drive	State-wide.	None
BRADY					
Sunburst (L. Cret.)	2	Strat.	Depletion, Partial Water Drive	10-acre spacing units with 75′ topographic tolerance from center of spacing unit. (Order 34-62, 55-62.)	None
BRORSON					
Mission Canyon (Miss.) (Oil & Gas)	4	Structural	Volumetric, Water Drive	One well per 160-acre unit, no closer than 660′ from unit boundary (Mission Canyon and Red River). (Order 5-69.) Gas to Brorson Field plant.	None
Red River (Ord.) (Oil & Gas)	6				
BRORSON, SOUTH					
Red River (Ord.) (Oil & Gas)	3	Structural	Volumetric, Water Drive	One well per 160-acre unit, no closer than 660′ from unit boundary. (Order 26-68.) Gas to Brorson Field plant.	None
BRUSH LAKE					
Red River (Ord.)	5	Structural-Strat.	Depletion-Water Drive	State-wide but with tolerance of 200′. (Order 14-70.)	None
CABIN CREEK					
Mission Canyon (Miss.) (Oil & Gas)	24	Structural	Water Drive, Depletion	Spacing waived and General Rules No. 213 (Deviation), (218 Commingling) and 219 (Dual Completion) are suspended until present Unit Agreement becomes inoperative. (Order 36-62.) Many wells produce from both Interlake and Red River by dual completion. Gas to gas plant.	Waterflood of Siluro-Ordovician reservoir has been expanded to a full scale peripheral flood. (Orders 60-62, 30-63.)
Interlake (Sil.) (Oil & Gas)	5	Structural	Water Drive, Depletion		
Red River (Ord.) (Oil & Gas)	69	Structural	Water Drive, Depletion		

Field, Formation, Age	No. Prod. Wells	Type of Trap	Probable Drive Mechanism	Spacing Regulations, Field Rules, and Remarks	Secondary Recovery or Water Disposal
CANAL					
Red River (Ord.)	1	Structural	Water Drive Depletion	320-acre spacing units consisting of East half and West half of governmental section. (Order 34-70.)	None
CAT CREEK					
Kootenai (L. Cret.) (3 sands)	40	Structural-Strat.	Water Drive	220′ from lease or property line, 440′ from every other well in same formation. (Order 17-55.) Five separate producing areas, East, Antelope, Mosby, West and Landheim Domes.	Three Kootenai waterfloods and two Ellis waterfloods in progress. (Orders 17-56, 18-59, 13-62, 8-68, 38-70.) Water from Third Cat Creek sand.
Morrison (U. Jur.)	2	Structural-Strat.	Water Drive		
Ellis (U. Jur.)	19	Structural	Depletion-Water Drive		
Amsden (Penn.)	2	Structural-Strat.	Water Drive	State-wide.	
CEDAR CREEK					
Judith River (U. Cret.) Gas	178	Structural	Volumetric	1200′ from legal subdivision line, 2400′ from every other well in same formation. (Order 33-54.)	None
Eagle (U. Cret.) Gas	60	Structural	Volumetric	320-acre spacing units. Wells in center of NW¼ and SE¼ of each section with 200′ topographic tolerance. (Order 1-61.)	None
CLARK'S FORK					
Frontier (U. Cret.)	1	Structural-Strat.	Depletion	330′ from quarter-quarter section line, 1320′ between wells with 75′ topographic tolerance. (Order 17-54.)	None
CLARK'S SOUTH FORK					
Greybull (L. Cret.) (Oil & Gas)	1	Structural-Strat.	Depletion-Water Drive	160-acre spacing, location no closer than 330′ from quarter section line or 1320′ from any other well.	None
CONRAD, SOUTH					
Dakota (L. Cret.) (Shut-in)	1	Strat.	Depletion	10-acre spacing units. Wells in center of each unit with 75′ topographic tolerance. (Orders 34-62, 31-63.)	None
COW CREEK					
Charles (Miss.)	2	Structural	Water Drive	80-acre spacing units, direction at option of operator but wells to be in SW¼ and NE¼ of each quarter section. (Order 11-69.)	None
CULBERTSON					
Red River (Ord.)	1	Structural-Strat.	Depletion-Water Drive	State-wide in part. Unitized as to SE¼ of section 32, SW¼ of section 33, N½NW¼ of section 4, and N½ NE¼ of section 5. (Order 29-70.)	None
CUPTON					
Red River (Ord.)	6	Structural-Strat.	Water Drive	80-acre spacing units consisting of E½ and W½ of quarter section; well location SE¼ and NW¼ of quarter section with 75′ topographic tolerance. (Order 31-55.)	None

Field, Formation, Age	No. Prod. Wells	Type of Trap	Probable Drive Mechanism	Spacing Regulations, Field Rules, and Remarks	Secondary Recovery or Water Dispasal
CUT BANK					
Kootenai (L. Cret.) Oil & Gas	727	Strat.	Depletion	(Kootenai formation includes Moulton, Sunburst, and Cut Bank sands.) Oil: 330′ from legal subdivision line. 650′ between wells in same formation. 5-spot on 40-acre tract permitted. 75′ topographic tolerance. (Order 10-54.) Gas: 330′ from legal subdivision, 2400′ between wells in same formation. 75′ topographic tolerance. (Order 10-54.) Sections 20, 29, and 32 of township 36 North, range 4 West spaced 320-acres (N½ & S½). (Order 26-70.)	There are 15 waterfloods in progress. Water from Eagle and Madison, or produced.
(Gas Only)	135				
Madison (Miss.) Oil & Gas	28		Water Drive		
(Gas Only) (Shut-in)	29				
DARLING					
(Included as part of Cut Bank Field)					
DEAN DOME					
Greybull (L. Cret.) Gas	1	Structural	Water Drive	State-wide. Oil ring below gas cap. One each shut-in gas and oil well.	None
Oil (Shut-in)	1				
DEER CREEK					
Interlake (Sil.)	2	Structural	Water Drive	80-acre spacing units consisting of any two adjacent quarter-quarter sections. Well location in NE¼ and SW¼ of each quarter section with 75′ topographic tolerance. (Orders 23-55 & 14-59.) Commingling of production permitted upon approval of Comm. Petr. Engr. (Order 18-63.)	Excess produced water is disposed into Dakota and Lakota formations. (Orders 6-56 & 3-58.) Two Silurian wells shut-in.
Red River (Ord.) (Shut-in)	1	Structural	Water Drive		
DELPHIA					
Amsden (Penn.)	1	Structural	Water Drive	State-wide.	None
DEVIL'S BASIN					
Heath (U. Miss.) (Shut-in)	5	Structural	Depletion	State-wide.	None
DEVON					
Blackleaf (U. Cret.) Gas (Shut-in)	23	Strat.	Volumetric	State-wide.	None
Kootenai (L. Cret.) Oil	Depleted	Strat.	Depletion	State-wide.	None
DRY CREEK					
Eagle (U. Cret.) Gas	1	Structural-Strat.	Volumetric	State-wide. Field re-delineated. (Order 8-70.)	None
Frontier (U. Cret.) Gas	7	Structural	Volumetric	Six additional gas storage wells, west end of structure.	
Greybull (L. Cret.) Gas, some oil	1	Structural-Strat.	Volumetric-Depletion	Depleted. Plugged and abandoned.	
DWYER					
Ratcliffe (Miss.)	14	Structural-Strat.	Water Drive-Volumetric	160-acre spacing units; well location in center of SE¼ of spacing unit with 175′ topographic tolerance. (Orders 25-60, 29-61.)	Produced water disposed into Dakota formation (Order 26-63.) Waterflood. (Order 20-68.)

Field, Formation, Age	No. Prod. Wells	Type of Trap	Probable Drive Mechanism	Spacing Regulations, Field Rules, and Remarks	Secondary Recovery or Water Disposal
EAST KEITH & KEITH					
Bow Island (L. Cret.) Gas	8	Structural	Water Drive	State-wide, except unitized portions spaced by (Order 22-62). Pooling (Order 19-66).	None
Sawtooth-Madison (Jur.-Miss.) Gas	5				
ELK BASIN (Mont. Portion)					
Frontier (U. Cret.)	10	Structural	Gravity Drainage	Rule No. 203 (Spacing) is waived within Unit Area. (Order 10-61.)	Frontier: Crestal gas injection. Embar-Tensleep; pressure maintenance by crestal gas in injection. Waterflood approved in 1966. (Order 5-66.) Madison: Water injection.
Embar-Tensleep (Perm., Penn.)	19	Structural	Gravity Drainage		
Madison (Miss.)	20	Structural	Water Drive		
ELK BASIN, NORTHWEST					
Frontier (U. Cret.)	2	Structural	Depletion	Spacing waived within unitized portion except that bottom of hole be no closer than 330′ from unit boundary and there be at least 1320′ surface distance between wells in same formation; 75′ topographic tolerance. (Orders 43-63, 28-64.)	Frontier: Waterflood in progress. Embar-Tensleep: Waterflood and gas injection in progress. (Order 3-67.) Madison, produced water.
Embar-Tensleep (Perm., Penn.)	5	Structural	Gravity Drainage		
Madison (Miss.)	2	Structural	Water Drive		
ETHRIDGE AREA					
Swift (U. Jur.)	5	Strat.	Water Drive	State-wide, except two wells by (Order 28-65).	None
(Shut-in)	1				
FAIRVIEW					
Winnipegosis (Dev.) (Oil & Gas)	1	Structural	Water Drive	160-acre spacing unit. Well location anywhere in spacing unit but no closer than 660′ from unit boundary. (Order 48-65, 1-67, 43-67, 44-67.) Gas to Fairview plant.	Northwest part of field unitized for gas injection. Gas from Fairview and Brorson fields. (Order 11-70.)
Red River (Ord.) (Oil & Gas)	11	Structural	Water Drive		
FERTILE PRAIRIE					
Red River (Ord.)	2	Structural-Strat.	Water Drive	80-acre spacing units consisting of north-south rectangular units. Well location in NW¼ and SE¼ of quarter section with 75′ topographic tolerance. (Orders 3-56, 7-62.)	None
FLAT COULEE					
Bow Island (L. Cret) Gas	3	Structural and Strat.	Depletion	330′ from boundary of legal subdivision and 1320′ from other wells in same reservoir. (Order 16-55.)	Waterflood unit application pending for Swift sandstone. (Order 25-70, 31-70.)
Dakota (L. Cret.) Gas	1	Strat.	Depletion	State-wide, exception Order 11-66.	
Swift (Jur.) Gas	1	Strat.	Depletion	State-wide gas spacing.	
Swift (Jur.) Oil	27	Strat.	Depletion	40-acre spacing units. Well in center of spacing unit with 150′ topographic tolerance. (Orders 16-62, 19-63.)	
Sawtooth (Jur.) Gas	1	Strat.	Depletion	State-wide.	

Field, Formation, Age	No. Prod. Wells	Type of Trap	Probable Drive Mechanism	Spacing Regulations, Field Rules, and Remarks	Secondary Recovery or Water Disposal
FLAT LAKE					
Nesson (Jur.)	1	Strat.	Partial Water Drive	160-acre spacing units; well location in center of NE¼ of quarter section with 200′ topographic tolerance. Wells no closer than 961′ to No. Dakota state line and no closer than 1600′ to Canadian line. (Orders 10-65 amended, 43-65, 23-66, 33-66.)	Excess salt water disposed into Muddy, Dakota, or Lakota formations. (Orders 39-64, 39-66.) Applied for Unit operation for eastern part of field. (Order 24-70.)
Ratcliffe (Miss.)	65	Structural-Strat.	Partial Water Drive		
FLAT LAKE, SOUTH					
Ratcliffe (Miss.)	3	Structural-Strat.	Partial Water Drive	Same as Flat Lake spacing. (Order 2-67.)	Excess salt water disposed into Muddy, Dakota, or Lakota. (Order 19-67.)
FRANNIE (Mont. Portion)					
Tensleep (Penn.)	1	Structural	Comb. Water Drive and Gravity Drainage	10-acre spacing units; well location in center of each unit with 100′ topographic tolerance. (Order 35-63.)	Unitized for waterflood of Phosphoria-Tensleep formations using produced fluids. (Order 21-70.)
FRED & GEORGE CREEK					
Sunburst (L. Cret.) (Oil & Gas)	29	Strat.	Depletion	Oil: 40-acre spacing units; well location in center of unit with 250′ topographic tolerance. (Orders 29-63, 1-65.)	Waterflood initiated July, 1970 using water from the Madison. (Order 13-70.)
Swift (U. Jur.) (Oil & Gas)	23	Strat.	Depletion	State-wide.	
FT. GILBERT					
Red River (Ord.)	1	Structural-Strat.	Depletion	State-wide.	None
GAGE					
Amsden (Penn.) (Shut-in)	1	Structural	Water Drive	State-wide.	None
GAGE, SOUTHWEST					
Amsden (Penn.) (Shut-in)		Unknown	Water Drive	Temporary 160-acre spacing expired. State-wide spacing now applies. (Order 50-65.)	None
GAS CITY					
Red River (Ord.)	17	Structural	Depletion-Water Drive	80-acre spacing units consisting of E½ and W½ of quarter sections; well location in NW¼ and SE¼ of quarter section; 150′ topographic tolerance. Spacing waived and state-wide Rules 213 (Deviation), 218 (Commingling) and 219 (Dual Completion) are waived in unitized portion of field. (Order 29-62.)	Excess produced water disposed into Judith River formation. (Orders 32-61, 20-64.) Waterflood using produced water and Madison water. (Order 16-69.)
GIRARD					
Red River (Ord.)	2	Structural-Strat.	Depletion-Water Drive	State-wide.	None

Field, Formation, Age	No. Prod. Wells	Type of Trap	Probable Drive Mechanism	Spacing Regulations, Field Rules, and Remarks	Secondary Recovery or Water Disposal
GLENDIVE					
Red River (Ord.) Oil & Gas	15	Structural-Strat.	Depletion-Water Drive	80-acre spacing units consisting of any two adjacent quarter-quarter sections; wells located in center of NE¼ and SW¼ of each quarter section with 75′ topographic tolerance. (Orders 27-55, 19-62, 58-62, 20-66.)	Excess produced water disposed into Swift and Dakota formations. (Orders 16-56, 16-63.)
GOLD BUTTE					
Bow Island (L. Cret.)	1	Structural	Water Drive?	640-acre spacing, well location any quarter-quarter section cornering on center of section. (Order 26-59.)	None
Swift (U. Jur.) Gas (Shut-in)	1	Structural	Water Drive?		
GOOSE LAKE					
Ratcliffe (Miss.) Oil & Gas	34	Structural-Strat.	Partial Water Drive	160-acre spacing units; well locations according to areas: Area I, center of NW¼ of quarter section; Area II, center of SE¼ of quarter section; Area III, center of NE¼ of quarter section. 200′ topographic tolerance. (Orders 42-63, 40-66, 47-67, 16-68.)	Excess produced water disposed into Mission Canyon and Dakota formations. (Orders 12-64, 14-66, 12-68.)
GRABEN COULEE					
Sunburst (L. Cret.)	2	Structural-Strat.	Depletion	40-acre spacing units; well location no closer than 330′ from legal subdivision.	None
Cut Bank (L. Cret.)	18	Structural Strat.	Depletion	(Cut Bank and Madison) Oil: 330′ from boundary of legal subdivision and 650′ from other well in same reservoir and on same lease. 75′ topographic tolerance. (Order 73-62.)	
Cut Bank-Madison (Dual)	2	Structural-Strat.	Depletion		
Madison (Miss.)	7	Structural-Strat.	Depletion		
GRANDVIEW					
Bow Island (L. Cret.) Gas (2 Zones)	5	Structural	Unknown	320-acre spacing units aligned in a north-south direction; well locations no closer than 660′ to a spacing unit boundary. (Order 49-67.)	None
Madison (Miss.) Gas	1	Structural	Unknown	Oil: State-wide. (3 shut-in wells.)	
GYPSY BASIN					
Sunburst (L. Cret.) Oil & Gas (Shut-in)	1	Structural-Strat.	Comb. Water Drive and Depletion	330′ from lease lines and 660′ between wells in same formation. Only two wells per quarter-quarter section. (Order 7-66.)	Order 6-64 permits injection of excessive gas (produced with oil) into the Sunburst gas cap.
Swift (U. Jur.) (Shut-in)	1	Structural-Strat.	Comb. Water Drive and Depletion	Same as Sunburst.	
Sawtooth-Madison (Oil & Gas) (Jur. & Miss.)	2	Structural-	Comb. Water Drive and Depletion	(Sawtooth-Madison) Oil: 40-acre spacing units; wells no closer than 330′ from lease line. (Order 7-66.) (Sawtooth-Madison) Gas: 160-acre spacing units; well locations in center of any quarter-quarter section in each 160-acre unit, 2340′ between gas wells. 150′ topographic tolerance. (Order 13-59.)	

Field, Formation, Age	No. Prod. Wells	Type of Trap	Probable Drive Mechanism	Spacing Regulations, Field Rules, and Remarks	Secondary Recovery or Water Disposal
HARDIN					
Frontier (U. Cret.) Gas (Shut-in)	17 31	Strat.	Volumetric	State-wide.	None
HARDSCRABBLE CREEK					
Mission Canyon (Miss.) (Shut-in)	1	Structural-Strat.	Water Drive	State-wide.	None
HAVRE					
Eagle (U. Cret.)	1	Structural-Strat.	Water Drive Depletion	State-wide. Single well used in town of Havre.	None
HAY CREEK					
Mission Canyon (Miss.)	1	Structural	Depletion	320-acre spacing, governmental half section, direction to be determined by operator. Location no closer than 660′ from unit boundary. (Order 15-69.) Gas to Brorson plant.	None
Red River (Ord.)	2				
HIAWATHA					
Tyler (L. Penn.) (2 Sands)	6	Structural-Strat.	Depletion	State-wide.	None
HIBBARD					
Amsden (Penn.)	1	Unknown	Water Drive	State-wide.	None
INJUN CREEK					
Tyler (Penn.)	1	Strat.	Depletion	State-wide.	None
IVANHOE					
Morrison (U. Jur.)	1	Structural and Strat.	Depletion	40-acre spacing unit for production from any one common formation; well location in center of unit with 200′ topographic tolerance. (Order 7-60.)	Waterflood of Tyler B & C sands discontinued.
Amsden (L. Penn.)	1	Structural and Strat.	Water Drive		
Tyler (L. Penn.)	10	Structural and Strat.	Depletion		
KATY LAKE					
Ratcliffe (Miss.) (Shut-in)	1	Structural-Strat.	Water Drive	State-wide. Formerly called Dwyer West.	None

Field, Formation, Age	No. Prod. Wells	Type of Trap	Probable Drive Mechanism	Spacing Regulations, Field Rules, and Remarks	Secondary Recovery or Water Disposal
KEG COULEE Tyler (Penn.) Oil & Gas	22	Strat.	Depletion	40-acre spacing in southwest portion of field except that spacing is waived in unitized portion. (Orders 3-64, 4-64, 23-64.) 80-acre spacing in remainder of field with variable pattern. (Orders 11-60, 28-62.) Topographic tolerance varies from 100′ to 150′. (Orders 11-60, 4-64, 23-64.) Buffer zone waived. (Order 16-65.) Gas to extraction plant in Sumatra Field.	Three waterflood units. (Orders 3-64, 28-66, 10-69, 14-69.) Madison water injected.
KEG COULEE, NORTH Tyler (Penn.)	2	Strat.	Depletion	40-acre spacing units; well location in center of spacing unit with 150′ topographic tolerance. (Order 46-64.) Buffer zone waived. (Order 16-65.) Gas to extraction plant.	None
KEITH (see East Keith)					
KELLEY Tyler (Penn.)	5	Strat.	Depletion	State-wide, 250′ tolerance. (Order 15-67.)	Waterflood using Third Cat Creek water. (Order 8-69.)
KEVIN-SUNBURST Sunburst (L. Cret.) Oil & Gas	415	Strat.	Depletion	9 wells per 40-acre tract; only 3 wells on any side of tract set back at least 220′ from line. Field delineated by Orders 8-54, 28-55. (Estimated 400 wells shut-in.)	There are four waterfloods in operation, using Madison water.
Gas only Sun River (Miss.) Oil & Gas	12 (part above)	Strat.			
LAIRD CREEK Swift (U. Jur.) Oil & Gas	10	Strat.	Depletion	State-wide. One shut-in gas well.	None
LAKE BASIN, NORTH Eagle, Frontier (U. Cret.) Gas	1	Structural	Unknown	640-acre gas spacing units consisting of one section. Well locations in center of NW¼ or SE¼ of each section with 75′ topographic tolerance. (Order 6-58.)	None
LANDSLIDE BUTTE Sun River (Miss.)	2	Unknown	Water Drive	State-wide.	None
LEARY Muddy (L. Cret.)	2	Structural-Strat.	Depletion	80-acre spacing with locations in NE¼ and SW¼ of each quarter section, 200′ topographic tolerance. (Order 12-69, 19-70.)	None

Field, Formation, Age	No. Prod. Wells	Type of Trap	Probable Drive Mechanism	Spacing Regulations, Field Rules, and Remarks	Secondary Recovery or Water Disposal
LISCOM CREEK					
Shannon (U. Cret.) Gas (Shut-in)	5	Structural-Strat.	Depletion	Spacing, one well per 640 acres within 40-acre square centered around SE NW (T. 1N.) and SE¼ (T. 2N.). (Order 5-67.)	None
LITTLE BEAVER (Mont. Portion)					
Red River (Ord.)	23	Structural	Comb. Depletion and Water Drive	Spacing waived and General Rules 213 (Deviation), 218 (Commingling) and 219 (Dual Completion) are suspended until present Unit Agreement becomes inoperative. (Order 41-62.)	Waterflood of the Red River was commenced in August, 1967. (Order 3-66). Minnelusa water.
LITTLE BEAVER, EAST (Montana Portion)					
Red River (Ord.)	13	Structural	Comb. Depletion and Water Drive	Same as for Little Beaver. (Order 42-62.)	Waterflood of the Red River was commenced in April, 1965. (Order 33-64.)
LITTLE WALL CREEK					
Tyler (Penn.)	1	Strat.	Depletion Water Drive	State-wide.	None
LODGE GRASS					
Tensleep (Penn.)	2	Structural-Strat.	Water Drive	160-acre spacing units; well locations vary according to areas; 250′ topographic tolerance. (Orders 26-64, 26-65.)	None
LONETREE					
Red River (Ord.)	1	Structural	Depletion	State-wide.	None
LONETREE SOUTH					
Interlake-Red River (Sil.-Ord.)	2	Structural	Depletion	State-wide.	None
LOOKOUT BUTTE (Includes Coral Creek Unit)					
Madison (Miss.)	4	Structural	Water Drive	State-wide spacing.	Water disposal into Madison. (Order 68-62.)
Interlake, Red River (Sil.-Ord.)	27	Structural	Comb. Depletion and Water Drive	160-acre spacing; well location in center of SE¼ of each quarter section with 150′ topographic tolerance. (Order 21-62.) Coral Creek Unit not subject to spacing rules. Re-delineated per Order 7-63.	Waterflood of Silurian-Ordovician approved in 1966. (Order 35-66.) Water from Minnelusa.
MASON LAKE					
Lakota (L. Cret.)	2	Structural	Water Drive	State-wide.	None
MELSTONE					
Tyler (Penn.)	4	Structural-Strat.	Depletion	State-wide.	None

Field, Formation, Age	No. Prod. Wells	Type of Trap	Probable Drive Mechanism	Spacing Regulations, Field Rules, and Remarks	Secondary Recovery or Water Disposal
MIDDLE BUTTE					
Blackleaf (Cret.) Gas (Bow Island) (Shut-in)	1 2	Structural	Volumetric	320-acre spacing units consisting of E½ & W½ of each section; well location in center of either of the inside quarter-quarter sections located in E½ of each spacing unit. 75′ topographic tolerance. (Order 3-60.)	None
MINERAL BENCH					
Duperow (Dev.)	1	Structural	Water Drive	State-wide.	Water disposal into Dakota-Lakota per Order 18-65.
MINERS COULEE					
Sunburst (L. Cret.) Swift (U. Jur.) (Shut-in) Madison (Miss.) (Shut-in)	1 3 1	Strat. Strat. Strat.?	Depletion Depletion Water Drive	40-acre spacing units consisting of quarter-quarter sections; well location no closer than 330′ from lease or property line and 660′ from any other well. (Order 9-66.)	None
MONARCH					
Mission Canyon (Miss.)	1	Structural-Strat.	Water Drive	80-acre spacing units consisting of east and west halfs of quarter section. Well location in SW¼ & NE¼ of quarter section. Location within 660′ square at center of quarter section. (Order 18-61.)	Produced water is disposed into the salt water disposal system for the Pennel Field.
Interlake, Red River (Sil.-Ord.)	13	Structural-Strat.		160-acre spacing units consisting of a quarter section; well location in center of SW¼ of each quarter section with 175′ topographic tolerance. (Orders 12-59, 4-63.)	
MOSBY					
(See Cat Creek)	15	Structural-Strat.	Water Drive	Listed as part of Cat Creek.	Waterflood, 2nd Cat Creek sand. (Order 8-68.)
MOSSER					
Greybull (L. Cret.)	2	Structural	Water Drive	Spacing waived. Future development requires administrative approval of the Commission. (Order 27-62.)	None
MT. LILLY					
Sunburst (L. Cret.) Madison (Miss.) Gas	1 2	Structural Structural	Water Drive Water Drive	640-acre spacing, well location in approximate center of any of the four quarter-quarter sections adjoining center of section; 250′ topographic tolerance. (Order 37-63.)	None
NORTH LAKE BASIN					
(See Lake Basin, North)					
NORTH WILLOW CREEK					
Tyler (Penn.)	3	Strat.	Depletion	State-wide.	None
OTIS CREEK					
Red River (Ord.)	2	Structural	Depletion	State-wide.	None

Field, Formation, Age	No. Prod. Wells	Type of Trap	Probable Drive Mechanism	Spacing Regulations, Field Rules, and Remarks	Secondary Recovery or Water Disposal
OUTLOOK					
Duperow (Dev.)	2	Strat. and Structural	Water Drive	State-wide.	Produced water is disposed into Dakota and Siluro-Devonian formations. (Orders 16-59, 17-65, 36-66.)
Silurian-Devonian	7	Strat. and Structural	Water Drive	160-acre spacing units; well location in center of either SW¼ or NE¼ of each quarter section; 175′ topographic tolerance. (Order 19-59A.)	
OUTLOOK, SOUTH					
Winnipegosis (Dev.) Interlake (Sil.) (Dual completion with Dev. zone)	1	Structural	Water Drive	160-acre spacing; permitted wells in either SW¼ or NE¼ of quarter section; 175′ topographic tolerance. (Order 19-59A.) Commingling permitted. (Order 45-64.)	Produced water disposed into Muddy and Dakota formations. (Orders 19-59, 17-65.)
Red River (Ord.) (Shut-in)	1	Structural	Water Drive		
OUTLOOK, WEST					
Winnipegosis (Dev.)	2	Structural	Water Drive	160-acre spacing units consisting of quarter sections; permitted wells in either SW¼ or NE¼ with a tolerance of 175′. (Order 7-67.)	Produced water disposed into Dakota formation. (Order 42-66.)
PENNEL					
Mission Canyon (Miss.)	8	Structural	Water Drive	(Miss.) 80-acre spacing units consisting of east and west half of quarter section; wells located in center of SE¼ and NW¼ of quarter sections with 150′ topographic tolerance. (Order 15-61.)	Produced water is being injected into Dakota, Siluro-Ordovician and Madison formations. (Orders 16-60, 46-62, 68-62, 36-63, 13-64.) Waterflood approved Nov. 1968. (Order 24-68.)
Lodgepole (Miss.)		Structural-Strat.			
Siluro-Ordovician Oil & Gas	104	Structural	Comb. Depletion and Water Drive	80-acre spacing units on west side and 160-acre spacing units on east side of pool. Wells to be located in SE¼ and NW¼ of each quarter section (80 acres) and in SE¼ of each quarter section on 160-acre spacing. (Orders 1-56, 8-56, 15-61, 20-62, 4-63, 7-63.) Commingling approved. (Order 59-62.)	
PINE					
Mission Canyon (Miss.) Oil & Gas	1	Structural	Water Drive	Spacing and General Rules 213, 218 and 219 are waived within the Pine Unit. 80-acre spacing units outside of unit area; well location in NW¼ and SE¼ of quarter section; 150′ topographic tolerance. (Order 37-62.) Gas through extraction plant.	A waterflood program for the south area was started in 1959. A waterflood of the north area was approved in 1967. (Orders 13-68, 1-60, 8-62, 32-67.)
Siluro-Ordovician Oil & Gas	110	Structural	Comb. Depletion and Water Drive		
PLEVNA					
Judith River (U. Cret.) Gas	25	Structural	Water Drive	1200′ from legal subdivision line; 2400′ from other wells on same lease or unit; 75′ topographic tolerance. (Orders 34-54, 4-57.)	None
POLE CREEK					
Amsden (Penn.) (Shut-in)	1	Structural	Water Drive	State-wide.	None

Field, Formation, Age	No. Prod. Wells	Type of Trap	Probable Drive Mechanism	Spacing Regulations, Field Rules, and Remarks	Secondary Recovery or Water Disposal
PONDERA					
Sun River (Miss.) Oil & Gas	278	Structural and Strat.	Comb. Depletion and Water Drive	Oil: 220′ from legal subdivision, 430′ from other wells in same reservoir on same lease; 75′ topographic tolerance. Porter Bench Extension: 330′ from legal subdivision line; 650′ from other wells in same reservoir on same lease or unit; 75′ topographic tolerance. (Order 9-54.) Gas: 1320′ from legal subdivision line; 3700′ from other wells on same lease or unit; 75′ topographic tolerance. (Order 9-54.) General Rules 207, 211, 219, 221, 223, and 224 do not apply.	Produced water injected into lower Madison. (Orders 11-56, 15-56, 4-65, 4-66.) A small waterflood project has been in operation since 1959, using Madison water.
PONDERA COULEE					
Sun River (Miss.) (Shut-in)	4	Structural	Water Drive	330′ from legal subdivision lines or upon a 10-acre spacing pattern; 75′ topographic tolerance. (Order 5-62.)	None
POPLAR, EAST					
Madison (Miss.) (Charles & Mission Canyon fms.)	59	Structural	Water Drive	State-wide spacing; field delineated by Order 7-55, 33 shut-in oil wells, 6 shut-in gas wells.	Excess produced water has been injected into the Dakota and Judith River formations. (Orders 1-55, 5-57, 7-57, 14-61, 21-61, 34-61, 10-62, 51-67.)
Heath (Tyler) (Penn.)	4	Structural-Strat.	Water Drive		
Nisku (Dev.)	3	Structural	Water Drive		
POPLAR, NORTHWEST					
Charles (Miss.) ("C" or McGowan Zone)	3	Structural	Water Drive	80-acre spacing units consisting of E½ and W½ of each quarter section; permitted wells in NW¼ and SE¼ of quarter section. 75′ topographic tolerance. (Order 18-55.)	None
PRAIRIE ELK					
Charles "C" (Miss.) (Shut-in)	1	Unknown	Water Drive	State-wide.	None
PUMPKIN CREEK					
Shannon (U. Cret.) Gas (Shut-in)	7	Structural-Strat.	Depletion	State-wide.	None
RAGGED POINT					
Tyler (Penn.)	11	Strat.	Depletion	40-acre spacing units; 75′ topographic tolerance. (Order 8-59.) Spacing waived for Tyler "A" sand reservoir within Tyler "A" Sand Unit except no well can be closer than 660′ to Unit boundary. (Order 35-65.)	A waterflood project of the Tyler "A" sand was commenced in February, 1966, using Third Cat Creek sand water. (Order 35-65.) Water disposal into Kibbey. (Order 19-65.)
Kibbey (Miss.)	1	Structural	Water Drive	State-wide spacing. (Order 15-54.) Commingling of production from Tyler and Kibbey permitted in one well per Order 11-65.	
RATTLESNAKE COULEE					
Sunburst (L. Cret.)	2	Strat.	Depletion	State-wide.	None

Field, Formation, Age	No. Prod. Wells	Type of Trap	Probable Drive Mechonism	Spacing Regulations, Field Rules, and Remarks	Secondory Recovery or Woter Disposal
REAGAN					
Sun River (Miss.)	Oil 50 Gas 1	Structural	Comb. Gas Cap and Water Drive	State-wide. Two shut-in oil wells. (Order 17-54.)	A pressure maintenance project utilizing gas injection was started in 1961. (Order 21-60.)
REAGAN, WEST					
Blackleaf (U. Cret.)	Gas 8	Strat.	Depletion	State-wide. Injected into Reagan field as secondary recovery agent.	None
RED CREEK					
Cut Bank (L. Cret.) Oil & Gas	9	Strat.	Depletion	40-acre spacing units; wells in center of spacing unit with 75′ topographic or obstruction tolerance; spacing and field rules waived for unitized partian. (Orders 16-58, 73-62, 31-64, 5-70.)	Excess produced water injected into Bow Island and Madisan. (Orders 22-63, 37-64.) A waterflood project in the Cut Bank sand was initiated in June, 1965, using Madison water.
Sun River (Miss.) Oil & Gas	12	Structural	Water Drive		
RED FOX					
Nisku (Dev.)	1	Structural	Water Drive	Field consists of one 160-acre spacing unit which straddles the section line. (Order 20-67.)	None
REDSTONE					
Winnipegosis (Dev.)	1	Unknawn	Water Drive	One well per 160-acre unit, but no closer than 660′ from unit boundary.	None
REPEAT					
Red River (Ord.)	1	Unknown	Water Drive	State-wide.	None
RESERVE					
Winnipegosis (Dev.)	1	Structural-Strat.	Water Drive	160-acre spacing units; permitted well within 1320′ square in center of quarter section. Commingling of Red River and Interlake production permitted on individual well basis. (Orders 34-66, 27-67.)	None
Interlake (Sil.) (Shut-in)		Structural-Strat.	Water Drive		
Red River (Ord.)	4	Structural-Strat.	Water Drive		
RICHEY					
Charles (Miss.) (Shut-in)	1	Structural	Water Drive	80-acre spacing units consisting af any two adjacent quarter-quarter sections; well locations in center of NW¼ and SE¼ of each quarter section; 75′ topographic tolerance. (Order 21-55.)	Part of produced water is being injected into the Dakata formation. (Orders 10-58, 19-61.)
RICHEY, SOUTHWEST					
Interlake, Dawson Bay (Sil.) (Dev.)	6	Structural	Depletion	160-acre spacing units; wells no closer than 900′ from boundary of spacing unit. (Order 25-62.)	A waterflood project in the Interlake and Dawson Bay was started in 1965. (Order 34-65.)

Field, Formation, Age	No. Prod. Wells	Type of Trap	Probable Drive Mechanism	Spacing Regulations, Field Rules, and Remarks	Secondary Recovery or Water Disposal
ROSCOE Lakota (L. Cret.) (Shut-in)	1	Structural	Water Drive	State-wide.	None
ROUGH CREEK Muddy (L. Cret.) (Shut-in)	1	Structural Strat.	Depletion	State-wide. Formerly called Duncan Creek.	None
RUDYARD Sawtooth (M. Jur.) Gas (Shut-in)	3	Structural	Volumetric	640-acre spacing units consisting of one section; well location in center of NW¼ of section with 75′ topographic tolerance. (Order 2-58.)	None
RUSH MOUNTAIN Winnipegosis (M. Dev.) Red River (Ord.)	1	Structural	Volumetric-Water Drive	State-wide. Dual zone completion in discovery well.	None
SALT LAKE Bakken-Nisku (Miss.-Dev.)	1	Structural	Water Drive	State-wide.	None
SAND CREEK Interlake, Red River (Sil.) (Ord.)	9	Structural	Water Drive	80-acre spacing units consisting of any two adjacent quarter-quarter sections. Wells located in center of NW¼ and SE¼ of each quarter section. (Order 16-59.) Commingling of production from Interlake and Red River authorized per Order 49-62.	Excess produced water is injected into the Swift formation. (Order 9-61.)
SHELBY AREA Sunburst (L. Cret.) Gas Swift (Jur.) Gas	53	Structural-Strat.	Depletion	State-wide. Field outline not delineated. A few small Swift sand wells commingled with Sunburst.	None
SHOTGUN CREEK Ratcliffe (Miss.) (Shut-in)	1	Structural	Water Drive	State-wide.	None
SIDNEY Mission Canyon (Miss.)	1	Structural	Water Drive	State-wide.	None
SNYDER Tensleep (Penn.)	4	Structural	Water Drive	10-acre spacing units with center 5-spot permitted; 150′ topographic tolerance. (Order 45-62.)	None
SOAP CREEK Tensleep, Amsden, Madison (Penn.) (Penn.) (Miss.)	17	Structural	Water Drive	One well per 10-acre spacing unit per production formation; well location in center of spacing unit with 100′ topographic tolerance. (Order 26-60.)	None

Field, Formation, Age	No. Prod. Wells	Type of Trap	Probable Drive Mechanism	Spacing Regulations, Field Rules, and Remarks	Secondary Recovery or Water Disposal
SPRING LAKE					
Nisku (Dev.) (Shut-in)	1	Structural	Depletion	One well per 160-acre spacing unit. Well location anywhere within 840′ square in center of spacing unit. (Order 6-63.)	None
Red River (Ord.)	2	Structural	Depletion		
SQUAW COULEE					
(Now included as part of Tiger Ridge Field.) (Order 10-70.)					
STENSVAD					
Tyler (Penn.)	5	Strat.	Depletion	40-acre spacing units; well location in center of spacing unit with 200′ tolerance. (Orders 2-59, 7-60.) Wells may be drilled anywhere within waterflood unit boundary, no closer than 660′ from unit boundary. (Order 5-65 Amended.)	A waterflood operation has been in progress since 1963, using Madison water. (Orders 48-67, 9-67.)
SUMATRA					
Tyler (Penn.) Oil & Gas	79	Strat.	Depletion	40-acre spacing units; well located in center of unit with 75′ tolerance. (Order 14-58.) Gas extraction plant in field.	Four waterflood units using Madison water. (Orders 48-67, 6-69, 15-69, 19-69, 3-70.)
TIGER RIDGE					
Judith River (U. Cret.) Gas (Shut-in)	1 5	Structural-Strat.	Depletion-Water Drive	State-wide.	None
Eagle (U. Cret.) Gas (Shut-in)	9 94	Structural-Strat.	Water Drive Depletion	Originally one well per section within 2640′ square in center of each unit and no closer than 1320′ from boundary of unit. Changed to state-wide spacing by Order 10-70.	Orders 17-67, 23-68, 10-70.)
Sawtooth (Jur.) Oil (Shut-in)	1	Structural-Strat.	Water Drive	State-wide.	
TRAIL CREEK					
Sunburst (L. Cret.) (Shut-in)	3	Structural-Strat.	Water Drive-Depletion	One well per 320 acres consisting of S½ and N½ of each governmental section but no closer than 990′ from spacing boundary. (Order 33-70.)	None
TULE CREEK					
Nisku (Dev.)	6	Structural	Water Drive	160-acre spacing units with permitted well anywhere within 1320′ square in center of each unit. (Orders 26-62, 6-65, 11-67.)	Produced water injected into Dakota and Judith River formations. (Orders 12-66, 24-67.)
TULE CREEK, EAST					
Nisku (Dev.)	2	Structural	Water Drive	160-acre spacing units with permitted well anywhere within 1320′ square in center of each unit. (Orders 40-64, 6-65.)	Water injected into Judith River formation. (Order 13-68.)

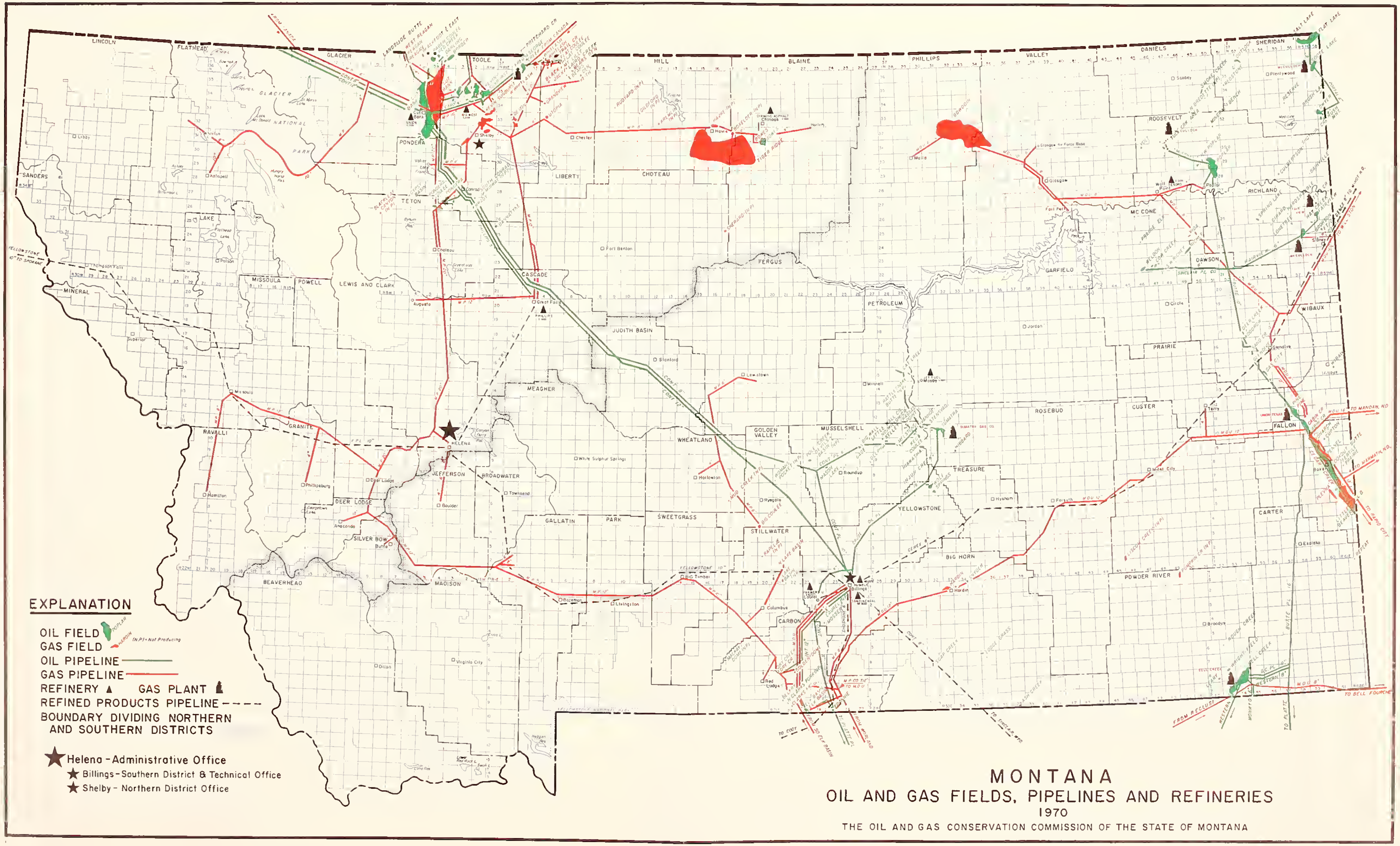
Field, Formation, Age		No. Prod. Wells	Type of Trap	Probable Drive Mechanism	Spacing Regulations, Field Rules, and Remarks	Secondary Recovery or Water Disposal
TULE CREEK, SOUTH						
Nisku (Dev.)		3	Structural	Water Drive	160-acre spacing units with permitted well anywhere within a 1320′ square in center of each unit.	Authority given to dispose of produced water into Dakota. (Order 44-64.) Into Judith River formation. (Order 29-67.)
UTOPIA						
Sawtooth (Jur.) Madison (Miss.)		5	Structural	Depletion Water Drive	State-wide.	None
VIDA						
Interlake (Sil.)		2	Structural	Water Drive	160-acre spacing units with permitted well anywhere within a 840′ square in center of each unit. (Order 39-63.)	Water injected into Lakota formation. (Order 14-68.)
VOLT						
Nisku (Dev.)		4	Structural	Water Drive	160-acre spacing units with permitted well anywhere within a 1320′ square in center of each unit. (Orders 27-64, 6-65, 32-65.)	Excess produced water is disposed into Judith River. (Order 3-65.)
Charles "C" (Miss.)	(Shut-in)	1	Structural	Water Drive	State-wide.	
WEED CREEK						
Amsden (L. Penn.)		3	Structural	Water Drive	State-wide.	None
WELDON						
Kibbey (Miss.)		8	Structural	Partial Water Drive	80-acre spacing unit; each quarter section divided into two separate units running in either a north-south or east-west direction; well location in center of NE¼ and SW¼ of quarter section with 200′ topographic tolerance. (Order 9-65.)	Excess produced water is disposed into the Dakota, Lakota, Morrison, and Charles formations. (Orders 31-65, 47-65, 37-66, 16-67.)
WEST BUTTE						
Sunburst (L. Cret.) Oil		1	Structural-Strat.	Depletion	State-wide, except W½ Section 16 is considered a single spacing unit.	None
Sawtooth (Jur.) Gas Madison (Miss.) Gas	(Shut-in)	2	Structural	Water Drive	Sawtooth-Madison gas commingled, 640-acre unit, no closer than 330′ from unit boundary, and in SE¼SE¼. One well permitted for each producing formation. (Orders 29-68, 4-70.)	
WEST REAGAN						
(See Reagan, West)						
WHITLASH						
Bow Island, Kootenai, Swift (Cret.) (Jur.)		Oil 43 Gas 26	Comb. Strat. and Struct.	Volumetric	Gas: 300′ from legal subdivision line and 2400′ between wells, 75′ topographic tolerance. Oil: 330′ from legal subdivision line and 650′ between wells; 5-spot location at center of 40-acre tract permitted; 75′ topographic tolerance. General Rules 207, 211, 219, 221, 223, and 224 suspended. (Orders 16-54, 27-70.)	None

Field, Formation, Age	No. Prod. Wells	Type of Trap	Probable Drive Mechanism	Spacing Regulations, Field Rules, and Remarks	Secondary Recovery or Water Disposal
WHITLASH, WEST Sunburst, Swift (Cret.) (Jur.) Sawtooth (Jur.)	Oil 1 Gas 9	Structural and Strat.	Volumetric	Gas: 160-acre spacing units consisting of quarter sections; well location anywhere within a 660′ square in center of spacing unit. Oil: 330′ from legal subdivision line, 650′ between wells in same reservoir on same lease; 5-spot location permitted. (Orders 61-62, 22-65 as amended.)	None
WILLS CREEK, SOUTH Interlake (Sil.)	2	Structural	Partial Water Drive	160-acre spacing units. Well location in center of SE¼ of each unit with 175′ topographic tolerance. (Orders 5-64, 30-66.)	None
WRIGHT CREEK Muddy (L. Cret.)	5	Structural-Strat.	Depletion Water Drive	80-acre spacing consisting of N½ and S½ of quarter section with locations in NW¼ and SE¼ of each quarter section with 200′ tolerance.	None
WOLF SPRINGS Amsden (Penn.)	8	Structural	Water Drive	80-acre spacing units consisting of N½ and S½ of each quarter section. Well location in center of NW¼ and SE¼ of each quarter section with 75′ topographic tolerance. (Orders 4-56, 9-59.)	None
WOODROW Charles, Duperow, Interlake Red River (Ord.)	1 1	Structural	Water Drive	80-acre spacing units consisting of any two adjacent quarter-quarter sections; well locations in center of NE¼ and SW¼ of each quarter section with 200′ topographic tolerance. (Order 47-62.)	Produced water injected into Dakota. (Order 48-62.)

STATE OF MONTANA – SUMMARY OF PRODUCING OIL FIELDS

MONTANA OIL AND GAS CONSERVATION COMMISSION
1970

LINE NO.	FIELD (OR POOL)	COUNTY	PRODUCING FORMATION	YEAR DISCOVERED	APPROX. DEPTH	A.P.I. GRAVITY	VOLUME FACTOR	AVG. NET PAY FT.	AVG. POROSITY %	AVG. CONNATE WATER %	ORIGINAL OIL IN PLACE BBLS/ACRE	PRODUCTIVE AREA 1-1-71 ACRES	ORIGINAL OIL IN PLACE 1000 BBLS.	ESTIMATED RECOVERY FACTOR % PRIMARY	ESTIMATED RECOVERY FACTOR % SECONDARY	ORIGINAL RESERVES 1000 BBLS. PRIMARY	ORIGINAL RESERVES 1000 BBLS. SECONDARY	TOTAL ORIGINAL RESERVES 1000 BBLS.	CUMULATIVE PRODUCTION 1-1-71 1000 BBLS.	REMAINING RESERVES 1-1-71 1000 BBLS.	1970 PRODUCTION TOTAL BBLS.	1970 PRODUCTION AVG. DAILY BOPD.	ORIGINAL RECOVERABLE RESERVES BBLS./ACRE	ORIGINAL RECOVERABLE RESERVES BBLS. ACRE/FT.	LINE NO.
1	Ash Creek (Montana)	Big Horn	Shannon (U.Cret.)	1952	4,500	34	1.05	14	22	42	13,200	200	2,640	25	6	660	158	818	676	142	26,783	76	4,090	292	1
2	Bainville	Roosevelt	Red River (Ord.)	1969	10,300	45	1.75	38	15	34	16,700	320	5,340	7	--	375	--	375	150	225	75,795	208	1,170	31	2
3	Bears Den	Liberty	Sunburst (L. Cret.)	1924	2,300	39	1.08	20	12	35	11,200	200	2,240	18	--	400	--	400	352	48	11,532	32	2,000	100	3
4	Bell Creek	Powder River	Muddy (Cret.)	1967	4,400	36	1.11	10	26	23	14,000	16,000	224,000	26	26	58,000	58,000	116,000	39,232	76,768	7,766,400	21,278	7,250	725	4
5	Benrud	Roosevelt	Nisku (Dev.)	1961	7,700	43	1.41	22	16	30	13,550	80	1,080	17	--	185	--	185	175	10	2,529	7	2,310	105	5
6	Benrud, East	Roosevelt	Nisku (Dev.)	1962	7,500	46	1.37	22	15	30	13,080	320	4,190	72	--	3,000	--	3,000	1,179	1,821	170,302	467	9,375	426	6
7	Benrud, Northeast	Roosevelt	Nisku (Dev.)	1964	7,600	46	1.40	23	16	30	14,270	160	2,280	37	--	850	--	850	738	112	35,816	98	5,310	231	7
8	Big Wall	Musselshell	Amsden (Penn.)	1953	2,500	19	1.61	17	16	35	8,520	280	2,390	26	--	630	--	630	579	51	18,305	50	2,250	132	8
9	Big Wall	Musselshell	Tyler (Penn.)	1948	3,000	31	1.02	22	17	40	17,070	1,220	20,820	27	4	5,600	750	6,350	5,624	726	113,540	311	5,200	236	9
10	Blackfoot	Glacier	Madison (Miss.)	1955	3,600	25	1.15	8	14	40	4,530	480	2,170	35	--	750	--	1,150	952	198	29,212	80	1,560	195	10
11	Blackfoot	Glacier	Cut Bank (L. Cret.)	1955	3,500	30	1.11	15	15	35	10,220	160	1,640	24	--	400	--						2,500	167	11
12	Bowes	Blaine	Sawtooth (M. Jur.)	1949	3,300	19	1.02	37	12	31	23,300	3,760	87,610	8	2	6,840	2,020	8,860	7,389	1,471	150,560	412	2,360	64	12
13	Brorson	Richland	Madison (Miss.)	1958	9,600	32	1.40	40	5	40	6,650	1,120	7,450	11	--	800	--	800	534	266	64,727	177	710	29	13
14	Brorson	Richland	Red River (Ord.)	1968	12,600	48	1.70	20	10	35	5,930	1,440	8,540	37	--	3,150	--	3,150	1,203	1,947	300,422	823	2,190	110	14
15	Brorson, South	Richland	Red River (Ord.)	1968	12,600	48	1.70	20	12	30	7,670	480	3,680	24	--	900	--	900	487	413	133,831	367	1,875	94	15
16	Brush Lake	Sheridan	Red River (Ord.)	1969	11,400	40	1.50	30	14	35	14,120	800	11,300	20	--	2,260	--	2,260	408	1,852	292,663	802	2,825	94	16
17	Cabin Creek	Fallon	Siluro-Ordovician	1953	9,000	33	1.20	50	13	30	29,420	7,620	224,180	22	11	49,310	25,000	74,310	45,618	28,692	2,557,657	7,007	9,750	195	17
18	Cabin Creek	Fallon	Madison (Miss.)	1956	7,300	33	1.13	25	11	30	13,220	2,260	29,880	60	--	18,000	--	18,000	10,207	7,793	1,156,629	3,169	7,960	318	18
19	Canal Creek	Richland	Red River (Ord.)	1970	12,700	47	2.07	58	8	40	10,430	320	3,340	15	--	500	--	500	66	434	50,914	522	1,560	195	19
20	Cat Creek (West Dome)	Petroleum	Kootenai (L. Cret.)	1920	1,100	52	1.10	51	21	19	61,180	900	55,060	27	6	14,900	3,100	18,000	16,856	1,144	69,115	189	20,000	392	20
21	Cat Creek (Antelope-Mosby)	Garfield	Kootenai (L. Cret.)	1920	1,200	52	1.10	10	21	19	12,000	200	2,400	22	11	528	264	6,249	4,730	1,519	98,498	270	3,960	396	21
22	Cat Creek	Petroleum, Garfield	Morrison (U. Jur.)	1945	1,600	52	1.10	6	22	40	5,590	240	1,340	32	--	428	--						1,785	298	22
23	Cat Creek	Petroleum, Garfield	Ellis (U. Jur.)	1945	1,800	52	1.10	25	18	40	19,040	880	16,760	30	--	5,029	--						5,710	228	23
24	Cat Creek	Petroleum	Amsden (Penn.)	1967	2,000	52	1.00	10	8	30	4,340	80	350	17	--	60	--	60	31	29	6,249	17	750	75	24
25	Culbertson	Roosevelt	Red River (Ord.)	1969	11,900	48	1.80	20	12	16	8,690	320	2,780	7	--	200	--	200	100	100	44,669	122	625	31	25
26	Cupton	Fallon	Red River (Ord.)	1955	9,600	38	1.25	40	12	30	20,850	1,120	23,350	6	--	1,500	--	1,500	348	1,152	136,452	374	1,340	33	26
27	Cut Bank	Glacier, Toole, Pond.	Kootenai (L. Cret.)	1932	2,900	31	1.09	18	15	35	12,490	49,000	612,000	20	13	122,500	77,500	200,000	117,622	82,378	5,300,919	14,523	4,080	227	27
28	Cut Bank	Glacier, Toole	Madison (Miss.)	1945	3,000	34	1.10	10	14	30	6,910	3,200	22,110	34	--	7,500	--	7,500	5,966	1,534	114,332	313	2,345	235	28
29	Deer Creek	Dawson	Red River (Ord.)	1952	9,900	41	1.20	90	7	30	28,510	400	11,400	9	--	1,051	--	1,051	1,051	--	702	2	2,625	29	29
30	Deer Creek	Dawson	Interlake (Sil.)	1956	9,400	43	1.20	38	7	30	12,040	320	3,850	32	--	1,250	--	1,250	1,123	127	21,021	58	3,910	103	30
31	Dwyer	Sheridan	Ratcliffe (Miss.)	1960	8,000	37	1.32	38	11	56	10,810	3,840	41,510	10	6	4,300	2,400	6,700	4,514	2,186	299,383	820	1,745	46	31
32	Elk Basin	Carbon	Frontier (U. Cret.)	1915	1,200	45	1.16	30	21	20	33,710	120	4,050	--	37	--	1,500	1,500	1,376	124	19,120	52	12,500	417	32
33	Elk Basin	Carbon	Tensleep (Penn.)	1942	5,000	29	1.16	124	11	10	82,100	1,400	114,900	--	57	--	61,465	61,465	46,256	15,209	1,373,156	3,762	46,785	377	33
34	Elk Basin	Carbon	Madison (Miss.)	1942	5,300	28	1.12	224	12	9	169,400	920	155,850	14	3	21,800	4,600	26,400	14,579	11,821	669,102	1,833	28,695	128	34
35	Elk Basin, Northwast	Carbon	Frontier (U. Cret.)	1947	3,400	47	1.29	28	19	30	22,400	120	2,690	25	17	672	453	1,125	1,094	31	10,864	30	9,375	335	35
36	Elk Basin, Northwest	Carbon	Madison (Miss.)	1947	6,200	35	1.08	124	12	35	69,480	200	13,900	8	--	1,100	--	1,100	891	209	13,171	36	5,500	44	36
37	Elk Basin, Northwest	Carbon	Tensleep (Penn.)	1964	6,000	37	1.15	27	12	22	17,050	580	9,890	14	12	1,421	1,232	2,653	993	1,660	115,938	318	4,575	169	37
38	Fairview	Richland	Winnipegosis (Dev.)	1967	11,500	43	1.10	27	7	30	9,330	160	1,490	17	--	250	--	250	178	72	25,386	70	1,560	58	38
39	Fairview	Richland	Red River (Ord.)	1965	12,700	47	1.70	35	11	28	12,650	1,760	22,260	19	9	4,200	2,000	6,200	2,680	3,520	577,613	1,583	3,520	101	39
40	Fertile Prairie	Fallon	Red River (Ord.)	1952	9,300	29	1.20	6	14	27	3,960	400	1,580	25	--	400	--	400	319	81	16,886	46	1,000	167	40
41	Flat Coulee	Liberty	Swift (U. Jur.)	1933	2,900	37	1.10	18	21	35	17,330	1,280	22,180	13	11	2,800	2,440	5,240	2,180	3,060	116,357	319	4,095	227	41
42	Flat Lake	Sheridan	Ratcliffe (Miss.)	1964	6,500	33	1.26	14	15	45	7,110	10,080	71,670	13	--	9,275	--	9,275	5,964	3,311	802,885	2,200	920	66	42
43	Flat Lake, South	Sheridan	Ratcliffe (Miss.)	1966	6,500	32	1.26	9	12	45	3,660	640	2,340	26	--	620	--	620	178	442	68,928	189	970	108	43
44	Fort Gilbert	Sheridan	Red River (Ord.)	1970	12,500	48	1.89	68	12	20	26,800	160	4,290	15	--	650	--	650	59	591	59,929	936	4,060	60	44
45	Fred & George Creek	Toole	Sunburst (L. Cret.)	1963	2,600	39	1.20	31	27	30	37,880	880	33,330	23	20	7,667	6,667	14,334	6,458	7,876	390,144	1,069	16,290	525	45
46	Fred & George Creek	Toola	Swift (U. Jur.)	1963	2,700	39	1.10	8	14	30	5,530	840	4,650	26	--	1,200	--	1,200	888	312	48,064	132	1,430	179	46
47	Gas City	Dawson	Red River (Ord.)	1955	8,900	38	1.28	25	12	35	11,820	2,800	33,100	26	3	8,609	993	9,602	7,059	2,543	292,207	801	3,430	137	47
48	Girard	Richland	Red River (Ord.)	1969	11,900	46	1.15	18	15	40	10,930	320	3,500	11	--	400	--	400	177	223	72,880	200	1,250	69	48
49	Glendive	Dawson	Red River (Ord.)	1952	8,900	38	1.25	147	8	35	47,440	1,280	60,720	20	--	12,155	--	12,155	8,795	3,360	355,442	974	9,500	65	49
50	Goose Lake	Sheridan	Ratcliffe (Miss.)	1962	7,000	34	1.20	40	16	55	18,620	6,240	116,190	7	--	7,850	--	7,850	4,449	3,401	535,079	1,466	1,260	31	50
51	Graben Coulee	Glacier	Sunburst, Cut Bank, Madison	1961	2,900	34	1.10	15	12	30	8,890	760	6,760	15	--	1,000	--	1,000	770	230	53,061	145	1,315	88	51
52	Hay Creek	Richland	Red River (Ord.)	1969	12,600	46	1.90	53	12	25	19,480	640	12,470	15	--	1,870	--	1,870	384	1,486	174,655	479	2,920	55	52
53	Hay Creek	Richland	Madison (Miss.)	1969	9,600	39	1.15	40	5	30	9,040	160	1,450	14	--	200	--	200	61	139	23,296	64	1,250	31	53
54	Hiawatha	Musselshell	Tyler (L. Penn.)	1967	5,000	33	1.15	34	12	30	19,270	360	6,940	17	--	1,200	--	1,200	786	414	113,639	311	3,330	98	54
55	Ivanhoe	Musselshell	Morrison (U. Jur.)	1953	2,800	30	1.08	10	15	35	7,000	100	700	26	--	180	--	180	165	15	4,372	12	1,800	180	55
56	Ivanhoe	Musselshall	Amsden (L. Penn.)	1960	3,600	32	1.08	9	17	40	6,590	160	1,050	34	--	360	--	360	313	47	8,688	24	2,250	250	56
57	Ivanhoe	Musselshell	Tyler (L. Penn.)	1956	4,100	33	1.08	29	15	20	25,000	600	15,000	27	--	4,000	--	4,000	3,586	414	74,433	204	6,670	230	57
58	Keg Coulee,West	Musselshell	Tyler (L. Penn.)	1960	4,600	32	1.15	26	12	32	14,310	480	6,870	21	15	1,446	998	2,444	1,894	550	101,160	277	5,090	196	58
59	Keg Coulee,South	Musselshell	Tyler (L. Penn.)	1964	4,700	34	1.15	13	13	32	7,750	400	3,100	32	26	1,004	818	1,822	794	1,028	32,883	90	4,555	350	59
60	Keg Coulee,East	Musselshell	Tyler (L. Penn.)	1960	4,600	33	1.15	17	15	32	11,700	720	8,420	11	11	917	897	1,814	859	955	30,143	83	2,520	148	60
61	Keg Coulee,North	Musselshell	Tyler (L. Penn.)	1964	4,600	33	1.15	14	12	32	7,710	120	930	22	--	200	--	200	161	39	9,122	25	1,667	91	61
62	Kelley	Musselshell	Tyler (L. Penn.)	1966	4,400	33	1.15	50	13	30	30,690	200	6,140	8	4	500	250	750	482	268	49,798	136	3,750	75	62
63	Kevin-Sunburst	Toole	Madison-Sunburst (Miss.-L.Crat.)	1922	1,500	32	1.08	7	20	35	6,540	40,200	262,910	28	5	73,141	12,190	85,331	70,105	15,226	327,401	897	2,120	303	63
64	Laird Creek	Liberty	Swift (U. Jur.)	1968	2,800	39	1.10	14	16	25	11,850	480	5,690	15	--	853	--	853	259	594	60,138	165	1,780	127	64
65	Leary	Powder River	Muddy (Cret.)	1969	5,800	41	1.15	7	17	33	5,380	160	860	12	--	100	--	100	34	66	17,041	47	625	90	65
66	Little Beaver	Fallon	Red River (Ord.)	1952	8,300	29	1.40	37	12	35	15,990	2,390	38,220	17	10	6,497	3,822	10,319	4,922	5,397	338,260	927	4,320	117	66
67	Little Beaver, East	Fallon	Red River (Ord.)	1954	8,300	30	1.50	24	13	35	10,490	1,600	16,780	23	12	3,873	1,936	5,809	3,149	2,660	183,535	503	3,630	151	67
68	Lodge Grass	Big Horn	Tensleep (Penn.)	1964	6,500	22	1.16	15	15	34	9,930	200	1,990	10	--	204	--	204	177	27	14,789	41	1,020	68	68
69	Lonetree Creek	Richland	Red River (Ord.)	1970	12,500	47	1.86	19	11	30	6,100	320	1,950	41	--	800	--	800	197	603	196,555	539	2,500	132	69
70	Lonetree Creek, South	Richland	Red River (Ord.)	1969	12,400	45	1.80	23	11	30	7,630	320	2,440	23	--	550	--	550	112	438	108,228	297	1,720	75	70
71	Lonetrea Creek, South	Richland	Silurian (Sil.)	1969	11,900	41	1.75	16	9	30	4,340	320	1,390	36	--	500	--	500	148	352	134,497	368	1,560	98	71
72	Lookout Butte	Fallon	Red River (Ord.)	1961	8,900	33	1.15	15	15	25	11,380	6,100	69,420	21	14	14,782	9,098	23,880	11,786	12,094	884,162	2,422	3,915	261	72
73	Lookout Butte	Fallon	Mission Canyon-Lodgepole (Miss.)	1966	8,000	26	1.13	26	10	35	11,600	1,920	22,270	9	--	2,000	--	2,000	1,203	797	87,780	240	1,040	40	73
74	Mason Lake	Musselshell	Cat Creek (Cret.)	1964	4,400	36	1.00	16	20	45	13,650	80	1,090	15	--	166	--	166	132	34	10,178	28	2,075	130	74
75	Melstone	Musselshell	Tyler (Penn.)	1948	4,300	34	1.09	25	15	30	18,680	360	6,720	25	--	1,700	--	1,700	1,570	130	21,593	59	4,720	189	75
76	Monarch	Fallon	Siluro-Ordovician	1958	8,400	32	1.10	31	7	35	9,950	2,240	22,290	21	--	4,700	--	4,700	2,718	1,982	215,119	589	2,100	68	76
77	Outlook	Sheridan	Siluro-Devonian	1956	9,000	38	1.12	20	8	30	7,760	1,600	12,420	45	--	5,563	--	5,563	4,702	861	122,351	335	3,480	174	77
78	Outlook	Sheridan	Duperow (Devonian)	1964	8,200	39	1.50	15	10	25	5,820	640	3,720	54	--	2,000	--	2,000	699	1,301	74,707	205	3,125	208	78
79	Outlook, South	Sheridan	Winnipegosis (Dev.)	1957	9,100	39	1.12	18	8	30	6,980	240	1,680	21	--	350	--	350	280	70	17,525	48	1,460	81	79
80	Outlook, West	Sheridan	Winnipegosis (Dev.)	1958	9,100	39	1.12	16	8	30	6,210	320	1,990	25	--	500	--	500	386	114	39,398	108	1,560	98	80
81	Pennel	Fallon	Siluro-Ordovician	1955	8,800	33	1.14	25	11	35	12,160	22,380	272,140	12	7	33,095	19,659	54,128	21,468	32,660	1,562,616	4,281	2,360	94	81
82	Pennel	Fallon	Mission Canyon (Miss.)	1957	7,000	31	1.10	38	3	30	5,630	720	4,050	17	--	689	--						960	25	82
83	Pennel	Fallon	Lodgepole (Miss.)	1960	7,500	36	1.13	30	8	35	10,710	320	3,430	20	--	685	--						2,140	71	83
84	Pine	Dawson, Wibaux, Fallon, Prairie	Siluro-Ordovician	1952	8,400	34	1.17	32	12	30	17,820	13,320	237,360	24	15	56,870	35,130	92,000	66,940	25,060	3,311,564	9,073	6,910	216	84
85	Pondera	Pondera, Teton	Madison (Miss.)	1927	2,100	34	1.20	15	16	31	10,710	5,560	59,550	37	--	22,000	--	22,000	18,892	3,108	313,425	859	3,960	264	85
86	Poplar	Roosevelt	Madison (Miss.)	1952	5,500	40	1.10	25	11	30	13,580	18,070	245,390	19	--	46,288	--	46,288	38,827	7,461	600,593	1,645	2,560	102	86
87	Poplar	Roosevelt	Heath (Penn.)	1969	4,900	38	1.10	8	11	50	3,100	480	1,490	34	--	500	--	500	115	385	48,926	134	1,040	130	87
88	Poplar	Roosavelt	Nisku (Dev.)	1969	7,300	42	1.40	12	8	50	2,660	320	850	40	--	340	--	340	102	238	56,728	155	1,060	88	88
89	Poplar, Northwest	Roosevelt	Madison (Miss.)	1952	6,300	40	1.10	16	10	45	6,210	400	2,480	20	--	500	--	500	441	59	17,112	47	1,250	78	89
90	Prichard Creek	Toole	Sunburst (Cret.)	1967	2,700	40	1.10	4	18	25	3,810	160	610	16	--	100	--	100	29	71	29,397	81	625	156	90
91	Ragged Point	Musselshell	Kibbey (Cret.)	1947	4,400	33	1.09	28	11	40	13,150	160	2,100	26	--	550	--	550	520	30	8,412	23	3,440	123	91
92	Ragged Point	Musselshell	Tyler (Penn.)	1956	3,600	32	1.11	13	14	32	8,650	680	5,880	21	20	1,262	1,200	2,462	1,568	894	68,855	189	3,620	278	92
93	Rattlesnake Coulee	Toole	Sunburst (L. Cret.)	1966	1,900	42	1.10	10	12	30	5,920	80	470	21	--	100	--	100	49	51	7,980	22	1,250	125	93
94	Reagan	Glacier	Madison (Miss.)	1947	3,700	38	1.10	11	12	30	6,520	2,520	16,430	33	6	5,419	1,000	6,419	4,872	1,547	255,426	700	2,550	232	94
95	Red Creek	Glacier	Cut Bank (L. Cret.)	1958	2,600	31	1.08	20	19	30	19,110	770	14,720	15	10	2,224	1,483	3,707	1,697	2,010	117,977	325	4,810	241	95
96	Red Creek	Glacier	Madison (Miss.)	1958	2,800	28	1.10	32	13	30	20,540	640	13,150	23	--	3,000	--	3,000	2,361	639	97,877	269	4,690	178	96
97	Red Fox	Roosevelt	Nisku (Dev.)	1967	7,700	46	1.40	10	18	30	6,980	160	1,120	31	--	350	--	350	309	41	27,690	76	2,190	219	97
98	Redstone	Sheridan	Winnipegosis (Dev.)	1958	9,400	42	1.10	34	8	30	13,430	160	2,150	44	--	951	--	951	309	642	43,995	121	5,940	175	98
99	Reserve	Sheridan	Winnipegosis (Dev.)	1967	10,200	45	1.17	7	8	30	2,600	480	1,250	40	--	499	--	499	431	68	44,238	121	1,040	149	99
100	Reserve	Sheridan	Red River (Ord.)	1966	11,100	39	1.30	18	6	30	4,510	960	4,330	15	--	660	--	660	334	326	110,954	304	690	38	100
101	Richey, Southwest	McCone	Siluro-Devonian	1952	9,200	48	1.37	27	9	30	9,630	1,160	11,170	15	2	1,675	175	1,850	1,724	126	35,761	98	1,590	60	101
102	Rush Mountain	Sheridan	Red River (Ord.)	1968	12,000	39	1.62	14	10	33	4,490	320	1,440	24	--	350	--	350	137	213	37,978	104	1,090	78	102
103	Sand Creek	Dawson	Red River (Ord.)	1959	9,000	39	1.30	25	10	40	8,950	880	7,880	30	--	2,364	--	2,364	1,913	451	87,535	239	2,690	108	103
104	Soap Creek	Big Horn	Tensleep-Amsden-Madison	1952	1,900	20	1.05	20	15	35	14,410	600	8,650	24	--	2,075	--	2,075	1,595	480	54,733	150	3,460	173	104
105	Spring Lake	Richland	Red River (Ord.)	1963	11,700	51	2.00	9	12	30	2,930	900	2,640	27	--	700	--	700	509	191	34,310	94	780	87	105
106	Stensvad	Musselshell, Rosebud	Tyler (Penn.)	1958	5,500	33	1.17	25	14	20	18,570	1,380	25,630	26	14	6,671	3,592	10,263	8,304	1,959	242,006	663	7,440	298	106
107	Sumatra	Rosebud	Tyler (Penn.)	1949	4,500	32	1.16	30	19	35	24,780	4,040	100,110	26	13	26,000	13,000	39,000	23,698	15,302	630,647	1,728	9,650	322	107
108	Tule Creek	Roosevelt	Nisku (Dev.)	1960	7,500	46	1.41	25	15	30	14,440	1,160	16,750	54	--	9,000	--	9,000	5,526	3,474	399,656	1,291	7,760	310	108
109	Tule Creek, East	Roosevelt	Nisku (Dev.)	1964	7,500	43	1.91	30	18	30	15,350	400	6,140	37	--	2,277	--	2,277	1,572	705	120,687	331	5,690	190	109
110	Tule Creek, South	Roosevelt	Nisku (Dev.)	1964	7,600	43	1.40	8	12	30	3,720	400	1,490	44	--	650	--	650	470	180	54,023	148	1,625	203	110
111	Volt	Roosevelt	Nisku (Dev.)	1964	7,300	47	1.40	14	20	30	10,860	800	8,690	23	--	2,000	--	2,000	1,231	769	155,980	427	2,500	179	111
112	Weed Creek	Yellowstona	Amsden (L. Penn.)	1966	6,200	35	1.07	12	8	23	5,360	640	3,430	30	--	1,029	--	1,029	486	543	48,437	133	1,610	134	112
113	Weldon	McCone	Kibbey (U. Miss.)	1964	5,900	39	1.01	14	16	35	11,180	1,560	17,440	47	--	8,203	--	8,203	6,428	1,775	328,361	900	5,260	376	113
114	Whitlash	Liberty	Swift-Sunburst (Cret.-Jur.)	1927	2,600	38	1.13	15	16	20	13,180	1,920	25,310	15	--	3,800	--	3,800	2,922	878	149,896	411	1,980	132	114
115	Wills Creek, South	Fallon	Silurian (Sil.)	1964	8,700	33	1.20	12	18	35	9,080	320	2,910	27	--	800	--	800	546	254	40,744	117	2,500	208	115
116	Wolf Springs	Yellowstona	Amsden (L. Penn.)	1955	6,200	30	1.07	11	6	23	3,720	3,840	14,280	35	--	4,953	--	4,953	4,346	607	55,699	153	1,290	117	116
117	Wright Creek	Powdar Rivar	Muddy (Cret.)	1969	4,800	35	1.10	5	26	48	4,770	480	2,290	13	--	300	--	300	89	211	59,750	164	630	126	117
118	Miscellaneous																			2,391	478,114	1,310			118
																				425,114	37,878,697	103,777			



MONTANA
OIL AND GAS FIELDS, PIPELINES AND REFINERIES
1970

THE OIL AND GAS CONSERVATION COMMISSION OF THE STATE OF MONTANA

GENERALIZED STRATIGRAPHIC CORRELATION CHART

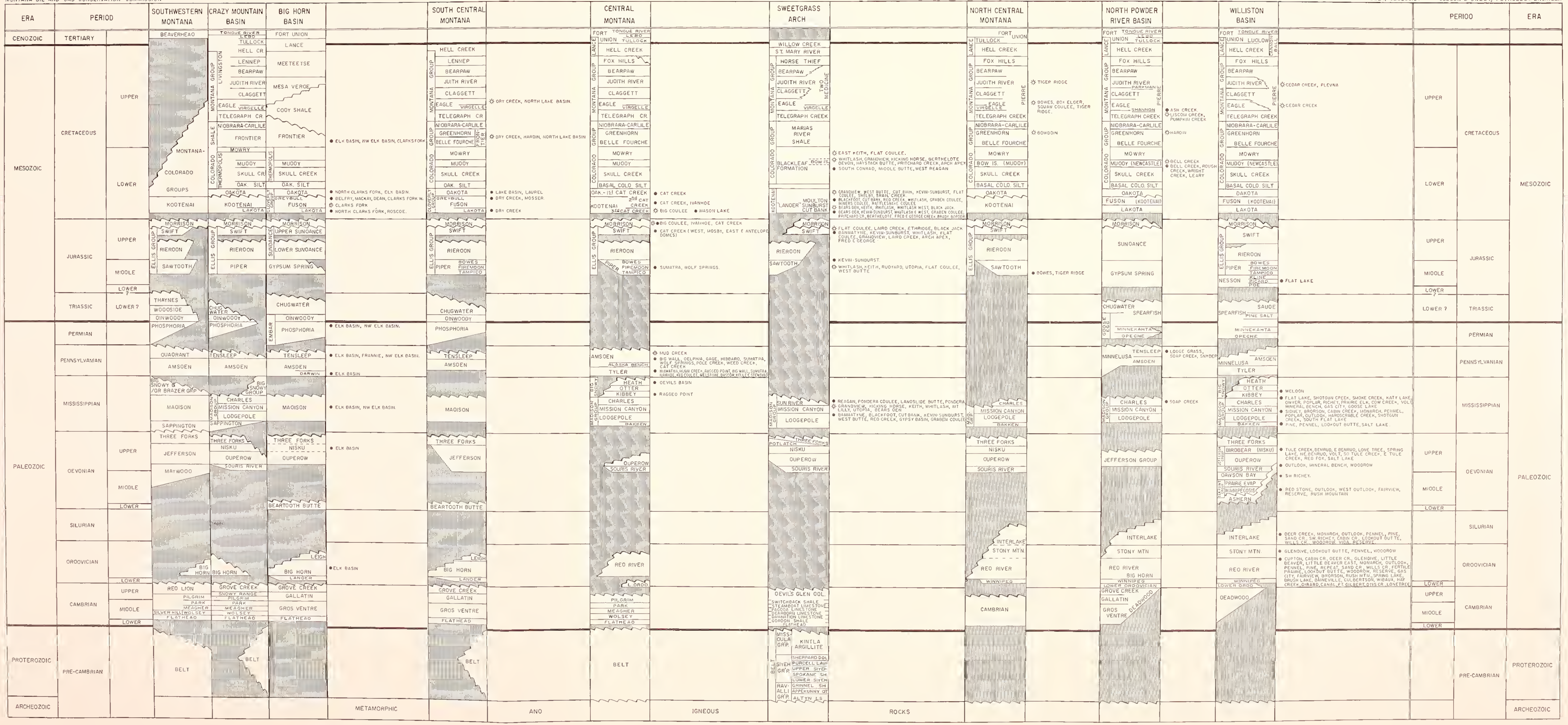
SHOWING PRODUCTIVE FORMATIONS IN MONTANA OIL AND GAS FIELDS

● OIL ☼ GAS

1970

MONTANA OIL AND GAS CONSERVATION COMMISSION

HERBERT D. HADLEY, GEOLOGIST *JUDSON D. SWEET, PETROLEUM ENGINEER*


ERA
PERIOD
SOUTHWESTERN MONTANA
CRAZY MOUNTAIN BASIN
BIG HORN BASIN
SOUTH CENTRAL MONTANA
CENTRAL MONTANA
SWEETGRASS ARCH
NORTH CENTRAL MONTANA
NORTH POWDER RIVER BASIN
WILLISTON BASIN
PERIOD
ERA
CENOZOIC
TERTIARY
MESOZOIC
CRETACEOUS
UPPER
LOWER
JURASSIC
MIDDLE
TRIASSIC
LOWER ?
PALEOZOIC
PERMIAN
PENNSYLVANIAN
MISSISSIPPIAN
DEVONIAN
SILURIAN
ORDOVICIAN
CAMBRIAN
PROTEROZOIC
PRE-CAMBRIAN
ARCHEOZOIC
● ELK BASIN, NW ELK BASIN, CLARKS FORK
● NORTH CLARKS FORK, ELK BASIN.
● BELFRY, MACKAY, DEAN, CLARKS FORK W.
☼ CLARKS FORK
● NORTH CLARKS FORK, ROSCOE.
● ELK BASIN, NW ELK BASIN.
● ELK BASIN, FRANNIE, NW ELK BASIN.
● ELK BASIN
● ELK BASIN, NW ELK BASIN.
● ELK BASIN
● ELK BASIN
☼ DRY CREEK, NORTH LAKE BASIN.
☼ DRY CREEK, HARDIN, NORTH LAKE BASIN
● LAKE BASIN, LAUREL
● DRY CREEK, MOSSER.
● DRY CREEK
● CAT CREEK
● CAT CREEK, IVANHOE
☼ BIG COULEE ● MASON LAKE
☼● BIG COULEE, IVANHOE, CAT CREEK
● CAT CREEK (WEST, MOSBY, EAST & ANTELOPE DOMES)
● SUMATRA, WOLF SPRINGS.
☼ MUD CREEK
● BIG WALL, DELPHIA, GAGE, HIBBARD, SUMATRA, WOLF SPRINGS, POLE CREEK, WEED CREEK, CAT CREEK
● HIAWATHA, INJUN CREEK, RAGGED POINT, BIG WALL, SUMATRA, IVANHOE, KEG COULEE, MELSTONE, BASCOM KELLEY, STENSVAD
● DEVILS BASIN
● RAGGED POINT
☼ EAST KEITH, FLAT COULEE.
☼ WHITLASH, GRANDVIEW, KICKING HORSE, BERTHELOTE DEVON, HAYSTACK BUTTE, PRITCHARD CREEK, ARCH APEX
● SOUTH CONRAD, MIDDLE BUTTE, WEST REAGAN
☼ GRANDVIEW, WEST BUTTE, CUT BANK, KEVIN-SUNBURST, FLAT COULEE, SHELBY, TRAIL CREEK.
● BLACKFOOT, CUT BANK, RED CREEK, WHITLASH, GRABEN COULEE, MINERS COULEE, RATTLESNAKE COULEE
☼ BEARS DEN, KEITH, WHITLASH, WHITLASH WEST, BLACK JACK.
● BEARS DEN, KEVIN-SUNBURST, WHITLASH & WEST, GRABEN COULEE, PRITCHARD CR., BERTHELOTE, FRED & GEORGE CREEK, BRADY, BORDER
☼ FLAT COULEE, LAIRD CREEK, ETHRIDGE, BLACK JACK
● BANNATYNE, KEVIN-SUNBURST, WHITLASH, FLAT COULEE, GRANDVIEW, LAIRD CREEK, ARCH APEX, FRED & GEORGE
● KEVIN-SUNBURST.
☼ WHITLASH, KEITH, RUDYARD, UTOPIA, FLAT COULEE, WEST BUTTE
● REAGAN, PONDERA COULEE, LANDSLIDE BUTTE, PONDERA
☼ GRANDVIEW, KICKING HORSE, KEITH, WHITLASH, MT LILLY, UTOPIA, BEARS DEN
● BANNATYNE, BLACKFOOT, CUT BANK, KEVIN-SUNBURST, WEST BUTTE, RED CREEK, GYPSY BASIN, GRABEN COULEE
☼ TIGER RIDGE
☼ BOWES, BOX ELDER, SQUAW COULEE, TIGER RIDGE.
☼ BOWDOIN
● BOWES, TIGER RIDGE
● ASH CREEK.
☼ LISCOM CREEK, PUMPKIN CREEK
☼ HARDIN
☼ BELL CREEK
● BELL CREEK, ROUGH CREEK, WRIGHT CREEK, LEARY
● LODGE GRASS, SOAP CREEK, SNYDER
● SOAP CREEK
☼ CEDAR CREEK, PLEVNA
☼ CEDAR CREEK
● FLAT LAKE
● WELDON
● FLAT LAKE, SHOTGUN CREEK, SMOKE CREEK, KATY LAKE, DWYER, POPLAR, RICHEY, PRAIRIE ELK, COW CREEK, VOLT, MINERAL BENCH, GAS CITY, GOOSE LAKE
● SIDNEY, BRORSON, CABIN CREEK, MONARCH, PENNEL, POPLAR, OUTLOOK, HARDSCRABBLE CREEK, SHOTGUN CREEK, SOUTH FLAT LAKE
● PINE, PENNEL, LOOKOUT BUTTE, SALT LAKE.
● TULE CREEK, BENRUD, E BENRUD, LONE TREE, SPRING LAKE, NE BENRUD, VOLT, SO TULE CREEK, E TULE CREEK, RED FOX, SALT LAKE
● OUTLOOK, MINERAL BENCH, WOODROW
● SW RICHEY.
● RED STONE, OUTLOOK, WEST OUTLOOK, FAIRVIEW, RESERVE, RUSH MOUNTAIN
● DEER CREEK, MONARCH, OUTLOOK, PENNEL, PINE, SAND CR., SW. RICHEY, CABIN CR., LOOKOUT BUTTE, WILLS CR., WOODROW, VIDA, RESERVE.
● GLENDIVE, LOOKOUT BUTTE, PENNEL, WOODROW
● CUPTON, CABIN CR., DEER CR., GLENDIVE, LITTLE BEAVER, LITTLE BEAVER EAST, MONARCH, OUTLOOK, PENNEL, PINE, REPEAT, SAND CR., WILLS CR., FERTILE PRAIRIE, LOOKOUT BUTTE, WOODROW, RESERVE, GAS CITY, FAIRVIEW, BRORSON, RUSH MTN., SPRING LAKE, BRUSH LAKE, BAINEVILLE, CULBERTSON, WIBAUX, HAY CREEK, GIRARD, CANAL, FT. GILBERT, OTIS CR., LONETREE
METAMORPHIC
AND
IGNEOUS
ROCKS